

# Toward the Archival Stage in the History of Knowledge<sup>1</sup>



TOM NESMITH

**RÉSUMÉ** La faiblesse socio-politique des archives est un problème fondamental dans les démocraties modernes. Les archivistes ne disposent pas de suffisamment d'autorité et de ressources pour faire leur travail car les citoyens ne sont pas pleinement conscients des utilisations réelles et des avantages communautaires des archives. C'est donc dire que les sociétés n'exercent pas assez de pressions sociales et politiques sur les institutions pour que celles-ci rendent leurs archives disponibles. Pourtant, ces utilisations sont devenues tellement nombreuses et extraordinaires qu'il pourrait être possible d'affirmer que le savoir humain et la société sont présentement en train d'être façonnés à l'image des documents archivistiques et qu'ils dépendent de ces matériaux comme ils ne l'ont jamais fait. En sommes-nous arrivés à ce que nous pourrions appeler le stade archivistique dans l'histoire du savoir ?

**ABSTRACT** The socio-political weakness of archives is a fundamental problem in modern democracies. Archivists do not have sufficient authority and resources for their work because citizens are not fully aware of the actual uses and community benefits of archives. Thus, societies do not place enough social and political pressure on institutions to make their archives available. Yet these uses have become so numerous and extraordinary that it may be possible to say that human knowledge and society are beginning to be shaped by and depend on archival materials as never before. Have we entered what might be called the archival stage in the history of knowledge?

- 1 Earlier versions of this article were presented as keynote addresses at the XVII Congresso Brasileiro de Arquivologia (Brazilian Congress of Archival Science) in Rio de Janeiro in June 2012 and at the conference of the Association of Canadian Archivists in Winnipeg in June 2013. The former appears in the congress proceedings; see Lúcia Maria Velloso de Oliveira and Isabel Cristina Borges de Oliveira, eds., *Preservação, acesso, difusão: Desafios para as instituições arquivísticas no século XXI* (Rio de Janeiro: Associação dos Arquivistas Brasileiros, 2013): 219–31. I thank the Associação dos Arquivistas Brasileiros (Brazilian Archivists Association) for permission to draw on that version of the article here. I also thank Gerald Friesen, Rand Jimerson, Anne Lindsay, and the late Terry Cook for valuable comments on those versions of this article. Any flaws that remain are my responsibility alone.

*I have not changed or wavered from the conclusion of the Commission on Canadian Studies: that archives are the foundation of Canadian studies, but ... I have strengthened in this belief, and indeed, enlarged it to one that sees archives, through the information, materials, and perspective they provide, as the foundation for the advancement of knowledge in any subject.*

Thomas H.B. Symons<sup>2</sup>

## Overview

There is no better summation of the intellectual journey of archives that *Archivaria* has helped guide over its 40-year history than the one above by Thomas Symons. Yet Symons made that gratifying observation at the Canadian Archives Summit convened in 2014 at a time of great anxiety about the future of archives.<sup>3</sup> Symons' keen awareness of the increasing importance of archives to human knowledge and thus societal well-being contrasts starkly with the persistent problems that make that achievement little known and still fragile. The most serious problem is the overall socio-political weakness of archives. Archivists do not have sufficient authority and resources for their work because citizens are not fully aware of the *specific* uses and societal benefits of archives. Thus, society does not place enough social and political pressure on institutions to make their archives available. Oddly, it seems that archivists themselves seldom explain these uses well to their sponsors and the wider public. This is even odder since these uses have become so numerous and extraordinary that it may be possible to say that human knowledge is beginning to be shaped by archival materials as never before. Have we entered what might be called the archival stage in the history of knowledge?

This article shares preliminary research into this question. Archives have existed for centuries, but they have played a very small role in the development of human knowledge across much of that history. Rather, direct observation of the physical world and of social phenomena, publications, and young records of short-term value have been the primary supports for new knowledge.

- 2 Thomas H.B. Symons, "To Know Ourselves: Archives," *Archivaria* 78 (Fall 2014): 142. Symons chaired the Association of Universities and Colleges of Canada's *Commission on Canadian Studies*. Its report, *To Know Ourselves*, famously concluded that "Canadian archives are the foundation of Canadian studies. Without them research on the development of our society, institutions, and culture would be impossible." See *The Symons Report: An Abridged Version of Volumes 1 and 2 of To Know Ourselves, the Report of the Commission on Canadian Studies* (Toronto: Book and Periodical Development Council; distributed by McClelland & Stewart, 1978), 169.
- 3 For more on the summit, see *Canadian Issues/Thèmes canadiens: Towards a New Blueprint for Canada's Recorded Memory*, special edition (Spring 2014); and the special section devoted to the summit in *Archivaria* 78 (Fall 2014).

This is not to suggest that historical information has not shaped the development of human knowledge, but that by comparison with other sources of that information, archive materials have shaped very little of it until recently. For various reasons, their ability to do so has been limited. By knowledge, I mean what people take to be known about any aspect of their own lives, society, and nature. By archives, for the purposes of this article, I mean unpublished recorded documentation of personal and/or institutional activities that is kept indefinitely in public or private institutions or in private hands. The many members of *this* distinctive type of archives together hold a massive, integral part of the overall human archive of *all* forms of knowledge transmission and memory institution, which include, for example, libraries, museums, and unrecorded oral communication. This article discusses the contribution of the particular type of archives defined above to the prospects for a transition to the archival stage in the history of knowledge. That contribution can, however, also be seen as formative of the most inclusive understanding of that transition, or one that goes beyond what is discussed here and would be shaped by the contributions of all types of human archives. In other words, achievement of that broader transition depends on the fate of the archives discussed here.<sup>4</sup>

The latter type of archives now plays a much more important role in the creation of knowledge. I am not suggesting that these archives play a role in every aspect of knowledge creation but that they are making significant and even foundational contributions to it. It is increasingly evident that a long-term perspective is important in addressing our most pressing contemporary societal and environmental problems. For any serious approach to the problems addressed by any field of endeavour, it is now necessary to ask what archives

4 For further discussion of types of archives, see Tom Nesmith, "Archives (Institution)" in *Encyclopedia of Archival Science*, ed. Luciana Duranti and Patricia C. Franks (Lanham, MD: Rowman & Littlefield Publishing Group, 2015), 92–95. The place in the history of knowledge of the type of archives discussed in this article has been largely overlooked. These archives do not yet figure much in the most prominent general introductions to that history, which focus on libraries, museums, educational institutions, the news media, young or current records unlikely to be kept indefinitely, and information technologies. This article aims to bring these archives into that broader summative discussion. For key general studies, see Peter Burke, *A Social History of Knowledge I: From Gutenberg to Diderot* (Cambridge: Polity Press, 2000) and his *Social History of Knowledge II: From the Encyclopédie to Wikipedia* (Cambridge: Polity Press, 2012); Ian F. McNeely and Lisa Wolverton, *Reinventing Knowledge: From Alexandria to the Internet* (New York: W.W. Norton and Company, 2008); Joyce Appleby, *Shores of Knowledge: New World Discoveries and the Scientific Imagination* (New York: W.W. Norton and Company, 2013); Jeremy Black, *The Power of Knowledge: How Information and Technology Made the Modern World* (New Haven, CT: Yale University Press, 2014); Andrew Pettegree, *The Invention of News: How the World Came to Know about Itself* (New Haven, CT: Yale University Press, 2014); Toni Weller, *Information History – An Introduction: Exploring an Emergent Field* (Oxford: Chandos Publishing, 2008); and Toni Weller, ed., *Information History in the Modern World: Histories of the Information Age* (Hampshire, UK: Palgrave Macmillan, 2011).

can contribute to the discussion of their solution. Given the vast accumulation of the distinctive type of information in the archives discussed here – greater, I submit, than any other forms of stored information, whether publications in libraries or artifacts in museums – these archives have the potential to be a central force in the creation of new knowledge. Their recently enhanced role, and immense potential role, lead me to suggest that we are entering the archival stage in the history of knowledge. Not that this process is certain to continue. For example, difficulties in archiving born-digital records, increasingly the most knowledge-rich form of human documentation, present serious obstacles that must be resolved. If this continues, the inability of archives worldwide so far to convince their societies of the importance of archiving these records will severely limit the future contributions of archival records to knowledge. I suggest that awareness of the new uses of archives can be of vital support in efforts to convince societies to resolve the digital issue, in order to ensure that these benefits of archives continue to expand.

Let me outline the main signs of the archival stage. More specific examples follow. Archives are now contributing significantly to a wide range of knowledge creation and dissemination activities across a great many forms of economic and cultural life, from the mass media to the formal education system. Archival research is now a much larger part of a broad variety of social science research. Use of archives and archiving documentation for the long term are now also becoming a growing priority for a wide range of major scientific endeavours, including astronomy, space exploration, medical research, environmental protection, and climatology. And archives are being used to provide knowledge to address a host of human rights, Indigenous rights, and social justice concerns. Moreover, especially among some new users of archives, there is growing emphasis on the importance to their research of archival concepts such as provenance and archival concerns such as the integrity of records, which they seek through greater understanding of the records' histories.

To unpack this general argument a bit more fully, one need only consider the fact that there has been in ordinary daily life an extraordinary expansion in the uses of archives. Each day, as we read books, newspapers, magazines, and web content; watch movies and television; listen to the radio and podcasts; go to live theatre; enjoy music; attend performances of dance; use a library; visit a museum, art gallery, or historic site; take a course or send children to school; play a video game; or even use a stamp, we enter and use archives indirectly, because these activities have all drawn significantly on archives. Archives are now all around us, shaping what we know in our day-to-day activities.

There has also been noteworthy growth in the need for archives related to, for example, a variety of scientific and medical activities. In astronomy, owing to massive new computing capacities, which allow access to unprecedented amounts of older data, astronomers are calling for much greater attention

to long-term archiving. The volume of this data is now, well, *astronomical*. Astronomers say that it has “transformed” knowledge in the field, and if that is to continue they must confront the archival “tsunami” heading toward them.<sup>5</sup> Space-exploration scientists make a similar claim and plea. As two of them write, “The need for scientific archiving of past, current, and future planetary scientific missions, laboratory data, and modeling efforts is indisputable.”<sup>6</sup> In climatological research, the role of archives has been vital, and that role is now widening, given increasing awareness of the impact of human activities on the climate. For instance, the condition of coral reefs is one key barometer of climate change, and the deterioration of the Great Barrier Reef is an example with great environmental and societal consequence. A recent study of the reef draws on archives in Australia. It notes both disappointment at the lack of certain relevant state archives and yet, too, the “surprises,” as the records found reveal that the danger to the reef is even greater and remedial action even more imperative because human actions (such as coral mining dating from the 1860s) had been contributing to deterioration far longer than expected.<sup>7</sup> These researchers maintain that their work fits well within what marine ecologists call a “new paradigm” that focuses on the historical context of human interactions with the environment. And that places new emphasis on the human archival record.<sup>8</sup>

Geoffrey Bowker, a historian of scientific archiving, comments that growing archival concern in the sciences means that the past neglect cannot continue. As Bowker writes, “The standard scientific model of doing a study doesn’t work well enough. In the standard model, one collects data, publishes a paper or papers, and then gradually loses the original data set.... There are

- 5 G. Bruce Berriman and Steven L. Groom, “How Will Astronomy Archives Survive the Data Tsunami?” *Communications of the ACM* 54, no. 12 (December 2011): 52–54.
- 6 See J. Zender and E. Grayzeck, “Lessons Learned from Planetary Science Archiving,” *Advances in Space Research* 38, no. 9 (2006): 2013–22.
- 7 Ben Daley, Peter Griggs, and Helene Marsh, “Reconstructing Reefs: Qualitative Research and the Environmental History of the Great Barrier Reef, Australia,” *Qualitative Research* 8, no. 5 (November 2008): 591–93, 608–9. The absence of similar Australian records useful in environmental research prompted one environmentalist there to launch a fuller examination and critique of archival policies and professional practices; see Lynette C. McLoughlin, “Environmental History, Environmental Management and the Public Record: Will the Records Be There When You Need Them?” *Australasian Journal of Environmental Management* 6, no. 4 (January 1999): 207–18.
- 8 Daley et al., “Reconstructing Reefs,” 609. Regarding the “new paradigm,” five marine ecologists write, “In recent years, ecologists have focused increasingly on the cumulative and interactive effects of sequences of events, rather than concentrating solely on the most recent insult that leads to ecosystem collapse”; see Terence P. Hughes et al., “New Paradigms for Supporting the Resilience of Marine Ecosystems,” *TRENDS in Ecology and Evolution* 20, no. 7 (July 2005): 381. See also Dennis Wheeler, “Archives and Climate Change: How Old Documents Offer a Key to Understanding the World’s Weather,” *Archives* 31, no. 115 (October 2006): 119–32.

a thousand variations of this story being repeated worldwide – more generally along the trajectory of notebooks to boxes to shelves to *dumpsters*.” He notes, however, that the development of these new science archives was proceeding without much awareness of the “historicity of data.” Bowker adds, “We need to historicize our data and its organization so as to create flexible databases that ... might really help us gain *long-term* purchase on questions of planetary management.”<sup>9</sup>

Bowker’s concern will sound familiar to archivists. Interestingly, it is emerging among scientists themselves. And this spread of archival concepts about records into new areas of archival concern, such as the sciences, is a harbinger of the archival stage in the history of knowledge. The field of brain research, or neuroscience, offers another example. It shares the same concerns about the burgeoning volume of data generated by new computing and scanning technologies. These tools make possible new ways of studying the brain. Although study of actual brains had long been an interest for those in this field, it was very difficult to do. After all, few of us are willing to let researchers have a go at our brains while we still need them between our ears. Over the past few centuries, macabre collections of brains emerged in various parts of the world. They were often poorly managed and provided little benefit to scientific research.<sup>10</sup> New scanning technologies offered new hope for brain research that can use digital archived images and other information. Many more of us are willing to pose for the scanner than part with our brains, even at death. But if these now greatly expanded image archives were to be made useful and reliable, neurologists began to point out that much greater attention to “data provenance and processing provenance” was required. They wanted “the metadata that describes the subject, how an image of that subject was collected, who acquired the image, what instrument was used, what settings were used, and how the sample was prepared.”<sup>11</sup>

9 Geoffrey C. Bowker, “Biodiversity Datadiversity,” *Social Studies of Science* 30, no. 5 (October 2000): 646, 645 (emphasis added).

10 Brian Burrell, *Postcards from the Brain Museum: The Improbable Search for Meaning in the Matter of Famous Minds* (New York: Broadway Books, 2005); Cathy Gere, “A Brief History of Brain Archiving,” *Journal of the History of the Neurosciences* 12, no. 4 (December 2003): 396–410; and John Darrell Van Horn and Arthur W. Toga, “Is It Time to Re-prioritize Neuroimaging Databases and Digital Repositories?” *NeuroImage* 47, no. 4 (October 2009): 1720–34.

11 Allan J. MacKenzie-Graham et al., “Provenance in Neuroimaging,” *NeuroImage* 42, no. 1 (August 2008): 178–95. And astronomers chime in. They recognize that the benefits of contemporary astronomical research “will only provide maximal *long-term* value to astronomers when accompanied by records of their provenance; that is, records of the data and processes used in the creation of such products.” See G. Bruce Berriman and Ewa Deelman, “The Role of Provenance Management in Accelerating the Rate of Astronomical Research,” *Proceedings of Science* (19 May 2010): 1 (emphasis added).

In other fields, too, concern about the provenance and integrity of archival records has come to the fore. In oceanography, which has made increasing use of older archives in the past two decades, David J. Starkey, Poul Holm, and Michaela Barnard have been confronted by sources of information that require careful assessment. “This entails,” they claim, “undertaking a provenance of the primary source material designed to establish why it was generated, by whom, by what methods, and how and why it was preserved.” The European Union took the provenance problem in science, engineering, medicine, and industrial computerized-documentation systems seriously enough to sponsor the EU Provenance Project in 2004. It saw the new potential of digital archives. But to achieve those benefits, the project wanted to ensure that “the information’s history, including the processes that created and modified it, are documented....”<sup>12</sup> Other scholars who have also begun to stress and explore the central importance of archival concepts in their work have spearheaded a profound reconceptualization of archives that now sees them as subjects of study in their own right, rather than, as traditionally understood, only sources of information for *other* subjects. This scholarship views archival records and archiving actions with them as key factors in shaping knowledge *in* the past and *of* the past, and thereby society then and now. A broad interdisciplinary group, including archivists, has made this reconceptualization of archives, or “archival turn” in scholarship, another prominent harbinger of the archival stage in the history of knowledge.<sup>13</sup>

12 David J. Starkey, Poul Holm, Michaela Barnard, eds., *Oceans Past: Management Insights from the History of Marine Animal Populations* (London: Earthscan, 2008), 2; Luc Moreau and John Ibbotson, *The EU Provenance Project: Enabling and Supporting Provenance in Grids for Complex Problems, Final Report* (The European Union Provenance Consortium, 6 December, 2006), 4, accessed 2 July 2015, <http://www.gridprovenance.org/publications/public-final-report.pdf>; and Paul Groth, Simon Miles, and Steve Munroe, “Principles of High Quality Documentation for Provenance: A Philosophical Discussion” in *International Provenance and Annotation Workshop (IPAW '06)*, vol. 4145 of *Lecture Notes in Computer Science*, ed. Luc Moreau and Ian Foster (Berlin and New York: Springer-Verlag, 2006). For the extensive project bibliography, see <http://www.gridprovenance.org/biblioPages/> (accessed 2 July 2015). The concluding quoted statement in this footnote is from John Ibbotson, *Provenance: Enabling and Supporting Provenance in Grids for Complex Problems: Final Report D1.1.4a* (2006), 5, accessed 2 July 2015, [ftp://ftp.cordis.europa.eu/pub/ist/docs/grids/provenance-final-report\\_en.pdf](ftp://ftp.cordis.europa.eu/pub/ist/docs/grids/provenance-final-report_en.pdf).

13 Jacques Derrida is perhaps the best-known and most influential contributor to the “archival turn,” particularly through his *Archive Fever: A Freudian Impression* (Chicago: University of Chicago Press, 1996). For a sampling of the now very extensive interdisciplinary literature on the reconceptualization of archives, see *Archival Science* 2, nos. 1–4 (2002), special issues edited by Terry Cook and Joan M. Schwartz on the theme of “Archives, Records and Power”; and Francis X. Blouin Jr. and William G. Rosenberg, eds., *Archives, Documentation, and Institutions of Social Memory: Essays from the Sawyer Seminar* (Ann Arbor, MI: University of Michigan Press, 2006). For an example of the new importance of the study of archives to those in other fields that also notes the key contributions of archivists themselves to knowledge creation – in this case the pioneering contributions of archivists in Canada to

Two other features of the emerging archival stage in the history of knowledge should also be mentioned in this introduction: Indigenous peoples' archiving and the community archives movement. In recent years, Indigenous people have contributed greatly to this development. They have used the type of archives discussed here to assert their rights and claims. They have also introduced us to their customary forms of archive – from spoken accounts to landscapes, making us think anew about what archives are. In so doing, they have brought archives to the forefront of socio-political affairs. And here for the moment they stand in for an unprecedented range of uses of archives in social justice and human rights issues. All of these developments have begun to shape our knowledge of Indigenous people, and social injustices and conditions of many kinds.

Indigenous people have also participated prominently in the community archives phenomenon. Indigenous communities worldwide, along with many other often marginalized groups, have created their own community-based archives. These archives have begun to broaden the range of society's archives, as well as challenge conventional notions of archives. And here for the moment they stand in for the wider range of more popular interest in archives that is giving shape to the archival stage – such as the genealogy boom and the seeming growth in enthusiasm about archiving one's personal or family materials oneself.<sup>14</sup>

## A Turn Back

Let us now go back in time to begin to walk through this outline in more detail, through an overview of the history of uses of archives. I suggest that it shows how, by the late 20th century, archives had not only begun to make more contributions to what people take to be known about their own lives, society, and nature, but also increasingly significant ones.

Although by the Middle Ages European governments and societies increasingly came to use records and to keep some of them, severe limitations long

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knowledge of the history of Canadian photography – see Carol Payne and Andrea Kunard, "Writing on Historical Photography: An Archival History of the Photograph in Canada," in *The Cultural Work of Photography in Canada*, ed. Payne and Kunard (Montreal: McGill-Queen's University Press, 2011).

14 Shaunna Moore and Susan Pell, "Autonomous Archives," *International Journal of Heritage Studies* 16, no. 4–5 (July–September 2010): 255–68. A case study of one such new community archives in a community with a strong Indigenous heritage is Greg Bak and Amanda Hill, "Deseronto Dreams: Archives, Social Networking, and Place," *Archivaria* 79 (Spring 2015): 1–26. See also Terry Cook, "Evidence, Memory, Identity, and Community: Four Shifting Archival Paradigms," *Archival Science* 13, nos. 2–3 (June 2013): 95–120; and Gerald Friesen, Del Muise, and David Northrup, "Variations on the Theme of Remembering: A National Survey of How Canadians Use the Past," *Journal of the Canadian Historical Association/Revue de la Société historique du Canada* 20, no. 1 (2009): 245.



hampered the archive as an accessible institution. England may have been among the first to commit to writing as the basis of state administration, but J.R. Lander notes that even after this process was well underway in the 15th century “the lack of information available to governments was staggering.” And their typical form in “cumbersome rolls” – along with the lack of adequate access tools – “meant that much of the information they contained could not be effectively used.”<sup>15</sup> Although there was interest in using state archival records, doing so could be dangerous. Monarchs did not encourage archival research for fear that it would raise undesirable questions about the current political and social order. For some who did write things unpleasing to the government, even about the distant past, severe punishment could result. Herschel Baker concludes that such “drastic limitation” on access to archives generated little more than “propaganda.” Upholding an entire political, religious, and social system in part through restricting access to archives and directing their use toward “propaganda” is no small thing. It does shape what people can know, but it does not contribute positively to the sum total of human knowledge.<sup>16</sup>

- 15 J.R. Lander, *The Limitations of English Monarchy in the Later Middle Ages* (Toronto: University of Toronto Press, 1989), 23. For additional insight into the English medieval state’s inability to use its archives effectively, see M.T. Clanchy, *From Memory to Written Record, England, 1066–1307*, 2nd ed. (Oxford: Blackwell Publishers, 1993), 162–84.
- 16 Herschel Baker, *The Race of Time: Three Lectures on Renaissance Historiography* (Toronto: University of Toronto Press, 1967), 30–32, 76–77, 34, 24; Daniel Woolf, *The Social Circulation of the Past: English Historical Culture, 1500–1730* (Oxford: Oxford University Press, 2003), 185. Regarding ancient archives and recordkeeping, classicist Sheila L. Ager writes, “Neither Romans nor Greeks, it seems, shared the acute archival mentality of the modern world, where the vastly increased capacity for storage presented by today’s technology has resulted in an unprecedented level of archiving and the permanent survival and accessibility of an extraordinary number of records.” See her “Archives and Record Keeping,” in *The Oxford Encyclopedia of Ancient Greece and Rome*, vol. 1 (Oxford: Oxford University Press, 2010), 224. This also seems to be the case for the ancient Near East and Egypt, where long-term recordkeeping was important in institutional and private activities, but only for records deemed necessary to those activities. Once this purpose ended, records were usually destroyed. The wider pursuit of literary, scientific, religious, and historical knowledge drew more from ancient forerunners of libraries than from these archives. See J.A. Black and W.J. Tait, “Archives and Libraries in the Ancient Near East,” in *Civilizations of the Ancient Near East* vol. 4, ed. Jack M. Sasson (London: Simon & Schuster/Prentice Hall International, 1995), 2202–3, 2207–8. For the view that most records in antiquity were not kept long, or were not used frequently even if they were, see Maria Brosius, “Ancient Archives and Concepts of Record-Keeping: An Introduction,” in *Ancient Archives and Archival Traditions: Concepts of Record-Keeping in the Ancient World*, ed. Brosius (Oxford: Oxford University Press, 2003), 11, 14–15; John Boardman, Jasper Griffin, and Oswyn Murray, eds., *The Oxford History of the Roman World* (Oxford: Oxford University Press, 1991), 205–11; and Charles W. Hedrick Jr., *Ancient History: Monuments and Documents* (Malden, MA, and Oxford: Blackwell Publishing, 2006), 99–104. As has been implied so far, this article focuses on the West, including Indigenous people within Western societies. I have not examined closely whether other societies are experiencing the transition to the

The limited amounts of state information available in the 15th century could not support the imperial ambitions of Spain, the most powerful nation between 1500 and 1800. Records were vital to Philip II, who reigned over this empire at the height of its power in the late 16th century (1556–98). He relied on vast amounts of documentation and kept a great deal of it by expanding the state archives.<sup>17</sup> It is not clear, though, whether he actually used the archives

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archival stage in the history of knowledge, but there appear to be similar patterns worth exploring further: often a significant long-standing commitment to record creation; state and/or private ownership and control of whatever records may have been kept for the long-term; very limited access to them, sometimes accompanied by their deliberate manipulation for political purposes or outright propaganda, with the obviously deleterious effects on knowledge creation; and by the mid- to late 20th century, much more formal commitment to archiving and access to archives, attended by growing societal debates over these and past policies and resulting in some widening of the impact of archives on knowledge and society. See Susan Whitfield's review of Ye Wa and Joseph W. Esherick, *Chinese Archives: An Introductory Guide*, Chinese Research Monographs 45 (Berkeley, CA: Institute of East Asian Studies, 1996), in *Journal of the Royal Asiatic Society (Third Series)* 7, no. 2 (July 1997): 341–42; William C. Kirby, "Archives and Histories in Twentieth Century China," in *Archives, Documentation, and Institutions of Social Memory: Essays from the Sawyer Seminar*, ed. Francis X. Blouin Jr. and William G. Rosenberg (Ann Arbor, MI: University of Michigan Press, 2006), 437; Yeunan (Linda) Liu, "Electronic Records Preservation in China – An Exploratory Inquiry," *Information Development* 30, no. 3 (August 2014): 213–22; Shuichi Yasuzawa and Masahito Ando, "Japanese Archives at the Dawn of a New Age," *Information Development* 4, no. 1 (January 1988): 33–36; Louis Cullen, "Japanese Archives: Sources for the Study of Tokugawa Administrative and Diplomatic History," *Japan Review* 25 (2013), 33–34; Eunha Youn, "Archival Traditions in Korean History: From Medieval Practice to the Contemporary Public Records Management Act," *Archival Science* 13, no. 1 (March 2013): 23–44. For Africa, see Carolyn Hamilton et al., eds., *Refiguring the Archive* (Cape Town: David Philip Publishers, 2002). For a brilliant study of archives as a key force shaping what can be known, see Yoav Di-Capua, *Gatekeepers of the Arab Past: Historians and History Writing in Twentieth-Century Egypt* (Berkeley, CA: University of California Press, 2009), which outlines the baleful effect on Egyptian historical knowledge and public life of manipulation of Egyptian archives by state and archival officials in the 19th and 20th centuries. For a study that deals with a major stumbling block confronting Islamic studies, the absence of most medieval Islamic archives, see Michael Chamberlain, *Knowledge and Social Practice in Medieval Damascus, 1190–1350* (Cambridge: Cambridge University Press, 2002). For use of the Ottoman Archives in seismology, see N. Ozer, "New Information on Earthquake History of the Akşehir-Afyon Graben System, Turkey, since the Second Half of 18th Century," *Natural Hazards and Earth System Sciences* 6, no. 6 (2006): 1017–23. For use of Ottoman military archives in medical research, see Hakan Erdem et al., "War and Infection in the Pre-Antibiotic Era: The Third Ottoman Army in 1915," *Scandinavian Journal of Infectious Diseases*, 43, no. 9 (September 2011): 690–95; and for Ottoman and Armenian archives and the Armenian genocide, see Yücel Güçlü, "Turkey, Present and Past: Will Untapped Ottoman Archives Reshape the Armenian Debate?" *Middle East Quarterly*, 16, no. 2 (Spring 2009): 35–42.

17 Geoffrey Parker, *The Grand Strategy of Philip II* (New Haven, CT, and London: Yale University Press, 1998), 28–29, 66.

much or let others do so. Indeed, until 1844, no one was allowed to access originals. A note signed by the king was required in order to obtain a copy of a document, and permission was rarely granted.<sup>18</sup> As Jorge Canizares-Esguerra comments, this culture of secrecy meant that “Iberians let their collective efforts gather dust in archives.” David Goodman writes that these immense archives “failed to become the basis for state action.” Records became “either lost or buried in the archives.”<sup>19</sup>

These constraints on the ability of archives to contribute more fully to knowledge were compounded by other impediments. Documents were often deliberately destroyed by governments.<sup>20</sup> War, vandalism, theft, fire, flood, insects, rats, birds, autograph seekers and document sellers ruined many others. Some archives *were* being kept well by dedicated individuals, but archival enthusiasms often waxed and waned, and neglect returned.<sup>21</sup>

Seventeenth-century France offers an example. Royal administrator Jean-Baptiste Colbert was among the first to see the importance of amassing under central control (that is, *his* control) archival and published information, of employing scholars to help him do so, and then actually relying on this information in support of state administration. But he, too, created a largely secret archives. Colbert gave access only to those scholars who helped him turn the records into sources of secret practical knowledge of historical, financial, scientific, and technical information that served state

- 18 Jacob Soll, *The Information Master: Jean-Baptiste Colbert's Secret State Intelligence System* (Ann Arbor, MI: University of Michigan Press, 2009), 20–21; Jacob Soll, “How to Manage an Information State: Jean-Baptiste Colbert’s Letters to His Son,” *Archival Science* 7, no. 4 (2007): 332; Edwin Jones, “John Lingard and the Simancas Archives,” *Historical Journal* 10, no. 1 (1967): 57–58. Alas, Philip did arrange to have a political enemy imprisoned and executed at his Simancas archives; see Geoffrey Parker, *Imprudent King: A New Life of Philip II* (New Haven, CT, and London: Yale University Press, 2014), 198–99.
- 19 See Jorge Canizares-Esguerra, “Introduction,” in *Science in the Spanish and Portuguese Empires, 1500–1800*, ed. Daniela Bleichmar, Paula De Vos, Kristin Huffine, and Kevin Sheehan (Stanford, CA: Stanford University Press, 2009), 3. See also David Goodman, “Science, Medicine, and Technology in Colonial Spanish America: New Interpretations, New Approaches,” in *Science in the Spanish and Portuguese Empires, 1500–1800*, 13.
- 20 Across Europe, for example, although many maps still exist, far more have not survived because they lost relevance as they aged. See Geoffrey Parker, “Maps and Ministers: The Spanish Habsburgs,” in *Monarchs, Ministers, and Maps: The Emergence of Cartography as a Tool of Government in Early Modern Europe*, ed. David Buisseret (Chicago: University of Chicago Press, 1992), 124–25.
- 21 Elizabeth Hallam, “Nine Centuries of Keeping the Public Records,” in *The Records of the Nation: The Public Record Office, 1838–1988, the British Record Society, 1888–1988*, ed. G.H. Martin and Peter Spufford (Woodbridge and Suffolk, UK: Boydell Press for the British Record Society, 1990); Donald R. Kelley, “Jean du Tillet, Archivist and Antiquary,” *Journal of Modern History* 38, no. 4 (December 1966): 337–54; and Maggie Yax, “Arthur Agarde, Elizabethan Archivist: His Contribution to the Evolution of Archival Practice,” *American Archivist* 61, no. 1 (Spring 1998): 56–69.

administration. This archives, however, did not outlive him as a key tool of government administration. French state archival systems fragmented in the 18th century, and Colbert's massive archives and library became a largely "private" collection. Colbert's use of these scholars ultimately "worked to expand the world of learning...." Yet this realm was bounded by the tight constraints designed to serve his and his family's political ambitions by strengthening the grip of absolute monarchy.<sup>22</sup> As the political turmoil leading to the French Revolution increased in the late 18th century, defenders of the monarchy again sought to amass archival and library materials in order to defend its legitimacy. Keith Baker notes, however, "the spectacle of a government that declared itself absolute but still lacked the ability to mobilize its historical titles in support of its political claims." Baker implies that the revolution succeeded in part *because* of the monarchy's failure to maintain and use archives. As a result, "the monarchy and its representatives had lost the battle to control French history."<sup>23</sup>

The Vatican may provide another good example of the limits of the usefulness of archives. Jacob Soll writes that, by the 17th century, "the papacy had great archives, but how centralized and accessible they all were, and to what extent archives, such as that of the Jesuits, were proactively used by the papacy, has not yet been conclusively established." Soll maintains that the Vatican was the chief repository of human knowledge at that time and Rome "a center of learning," but this ascendancy would fade, he adds, "in a world of knowledge increasingly focused on natural sciences; practical, empirical learning; and merchant empires."<sup>24</sup> Peter Burke provides a similar assessment of Rome's declining position "as a center of information" after the 1660s. The Vatican Secret Archives remained closed for the most part until the late 19th century, when Pope Leo XIII liberalized access. Pope Leo's initiatives also included granting wider access to the Vatican Library in the 1880s. The library had been established in the 1470s, and by the 17th century had acquired very valuable holdings of both books and personal and family archives. But access to them remained limited and difficult, even if permitted, owing to the lack of guides to the holdings and very restricted access to those that did exist. In 1993, the prefect of the library, Canadian scholar Father Leonard Boyle, OP,

22 Soll, *The Information Master*, 1, 7, 100, 121–39, 165. For an assessment of 18th-century management of records of French colonial administration, see Loïc Charles and Paul Cheney, "The Colonial Machine Dismantled: Knowledge and Empire in the French Atlantic," *Past and Present* 219, no. 1 (May 2013): 127–63. It concludes that, like the Iberian case discussed above, "valuable information was simply laid aside, buried in the archives" (pp. 160–61).

23 Keith Michael Baker, *Inventing the French Revolution: Essays on French Political Culture in the Eighteenth Century* (Cambridge: Cambridge University Press, 1990), 67–68, 83–85.

24 Soll, *The Information Master*, 23–24.

noted that even in the 19th century (prior to the 1880s), “when all over Europe libraries and learned societies were coming to life, if not bustling with activity, readers scarcely even came to the Vatican Library.”<sup>25</sup>

The emergence of printing seems to have further marginalized archives as contributors to knowledge. The cumbersome handwritten media of archival records eventually could not compete with the comparative ease of use and widespread accessibility of printed publications for distributing knowledge.<sup>26</sup> With the rapid spread of printed works came what Henri-Jean Martin calls “the reign of the book.”<sup>27</sup> Although some archival records were printed, only a very small amount could be made more accessible that way. Printed publications, it seems, brought libraries to the fore as the leading repositories of knowledge, rather than archives. And the problems of handling information

- 25 See Peter Burke, “Rome as a Center of Information and Communication,” in *From Rome to Eternity: Catholicism and the Arts in Italy, ca. 1550–1650*, ed. Pamela M. Jones and Thomas Worcester (Leiden, NL: Brill, 2002), 266–67; Owen Chadwick, *Catholicism and History: The Opening of the Vatican Archives* (Cambridge: Cambridge University Press, 1978), 99–107; and Nicholas J. Tussing, “The Politics of Leo XIII’s Opening of the Vatican Archives: Ownership of the Past,” *American Archivist* 70, no. 2 (Fall/Winter 2007): 364–86. For Boyle’s comment, see Anthony Grafton, ed., *Rome Reborn: The Vatican Library and Renaissance Culture* (Washington, DC: Library of Congress, 1993), xiv–xvi. In the case of another great Italian and European archives in the 16th and early 17th centuries – that of the Venetian Republic – Filippo De Vivo, a leading exponent and practitioner of the “archival turn” among historians, reminds us that there are some variations in the overall pattern suggested here. Restrictions on access to information in Venetian state records, though stringent, even resulting in capital punishment for violators in one notorious case, were not always effective, particularly when secret records contained valuable contemporary political information. Leaked ones could inform unauthorized historical accounts, but some records were used by the republic in legal and political disputes with other governments and in state-sponsored official histories. Venice was able to impose tighter controls by the early 17th century by censoring portions of its official histories and refusing to publish others. See Filippo De Vivo, “Cœur de l’État, lieu de tension : Le tournant archivistique vu de Venise (XV<sup>e</sup>-XVII<sup>e</sup> siècle),” *Annales. Histoire, Sciences Sociales* 68, no. 3 (2013), and his *Information and Communication in Venice: Rethinking Early Modern Politics* (New York: Oxford University Press, 2007), 48–70, 254–56. The republic’s reach even extended to France, where Venice’s complaint about publication in 1676 of a critical history of the Venetian government, which drew on Venetian archival documents, resulted in the jailing of its author in the Bastille for six weeks. See Jacob Soll, “Empirical History and the Transformation of Political Criticism in France from Bodin to Bayle,” *Journal of the History of Ideas* 64, no. 2 (April 2003): 312–13. Alas, the oldest portions of the Venetian state archives, kept at St. Mark’s Basilica, were said to have been destroyed in 976 and 1200. Subsequently, some of the oldest state records, “whose existence had been forgotten,” were still being stored there. “Bulky and incomprehensible,” says their historian, “they were treated like rubbish”; see Claudia Salmini, “Buildings, Furnishing, Access, and Use: Examples from the Archive of the Venetian Chancery, from Medieval to Modern Times,” in *Archives and the Metropolis*, ed. M.V. Roberts (London: Guildhall Library Publications, 1998), 97, 105–6.
- 26 Woolf, *The Social Circulation of the Past*, 156–58, 281–87.
- 27 Henri-Jean Martin, *The History and Power of Writing* (Chicago: University of Chicago Press, 1994), 233.

overload caused by printing, not the problems faced in managing archives, emerged as the major information or knowledge management concerns of society.<sup>28</sup>

This overall pattern of limited ability to contribute to knowledge changed in the 19th century with the creation of more central state-funded archives. Archives began to make a major contribution to knowledge through the efforts of an emerging cadre of professional historians and archivists.<sup>29</sup> But restrictions on records remained tight. By the 1860s, only limited access was allowed to the records of the central agencies of government in Britain's Public Record Office. This ranged from access to records created up to 1688 (Foreign Office) to 1820 (Treasury and War Office) and no access at all except with special permission and conditions of use (Treasury Solicitor's Department).<sup>30</sup> And although the French government made much of its desire to make more accessible to historians the "arcane impenetrable Archives," as the chief archivist, Léon de Laborde, called the Archives nationales in 1858, the results were problematic for knowledge creation. When some scholars began writing histories implicitly critical of the current regime, access to records was made "secretly" and subtly much tighter.<sup>31</sup>

Across the late 19th and through the mid-20th century, the new professional academic historians flooded into these emerging state archives, such as the Public Archives of Canada (established in 1872), and made major contributions to historical knowledge. By the 1920s, a "renaissance" in Canadian historical understanding was underway.<sup>32</sup> Other academic disciplines, such as the modern social sciences, emerged at about the same time and tended to occupy the intellectual room the historians left open, but did not involve much use of

28 Ann Blair, *Too Much to Know: Managing Scholarly Information Before the Modern Age* (New Haven, CT: Yale University Press, 2010). For an example of the major role of printing and publications in the development of knowledge, see Marina Frasca-Spada and Nick Jardine, eds., *Books and the Sciences in History* (Cambridge: Cambridge University Press, 2000) on their impact on scientific knowledge.

29 John Kenyon, *The History Men: The Historical Profession in England Since the Renaissance* (Pittsburgh, PA: University of Pittsburgh Press, 1984), 92.

30 John D. Cantwell, *The Public Record Office, 1838–1958* (London: H.M. Stationery Office, 1991), 219–20.

31 Jennifer S. Milligan, "The Problem of *Publicité* in the Archives of Second Empire France," in *Archives, Documentation, and Institutions of Social Memory: Essays from the Sawyer Seminar*, ed. Francis X. Blouin Jr. and William G. Rosenberg (Ann Arbor, MI: University of Michigan Press, 2006), 20–24, 27, 31. See also Jaak Valge and Birgit Kiba, "Restrictions on Access to Archives and Records in Europe: A History and the Current Situation," *Journal of the Society of Archivists* 28, no. 2 (October 2007): 197; and Pierre Nora, "Introduction," in *Archives et nations dans l'Europe du XIX<sup>e</sup> siècle*, ed. Bruno Delmas and Christine Nougaret (Paris: École des chartes, 2004), 16–17.

32 Lewis H. Thomas, *The Renaissance of Canadian History: A Biography of A.L. Burt* (Toronto: University of Toronto Press, 1975), 90–92.

such archives.<sup>33</sup> Other rapidly developing important fields of knowledge, such as science and medicine, also made little use of archives. Not many historians studied the history of science or medicine until the mid- to late 20th century. Some doctors wrote medical history, but not many, and those who did sometimes lamented the lack of awareness of the subject and its relevance to medical care among their colleagues.<sup>34</sup> Jacalyn Duffin, a hematologist and academic historian of medicine, writes that, beginning in the 19th century, “clinical applications of medical history waned” and “all but vanished into the nether realm of classics, curiosities, and after-dinner speeches.”<sup>35</sup> For science and medicine, it seems, the published record in professional journals was deemed sufficient archives. Not surprisingly, their titles often were *Archives of ...* followed by the name of the particular discipline or sub-field. Thus, academic historians (including many of their archivist colleagues) predominated among users of archives through to the mid-20th century, producing a vast outpouring of mainly political, military, constitutional, and diplomatic history as the principal contribution of archives to the history of knowledge in those years.<sup>36</sup>

### Taking Turns

In the late 20th and early 21st centuries, this pattern changed dramatically. Historians, of course, continued to use archives and make even greater contributions to knowledge by opening wider the study of social and cultural history. And they were joined by a growing range of social scientists. This “historic turn in the human sciences,” as one observer calls it, was also a “‘turn to the archive’ in the human sciences.”<sup>37</sup> As Marlene Manoff notes, researchers

33 For anthropology as an example, see Paul Erickson and Liam D. Murphy, *A History of Anthropological Theory* (Peterborough, ON: Broadview Press, 1998); see also Margaret R. Somers, “Where is Sociology after the Historic Turn?: Knowledge Cultures, Narrativity, and Historical Epistemologies,” in *The Historic Turn in the Human Sciences*, ed. Terrence J. McDonald (Ann Arbor, MI: University of Michigan Press, 1996), 57. Dorothy Ross, commenting on the development of American social science in the early 20th century, observes “a slow paradigm shift in the social sciences. The result was a broad move away from historico-evolutionary models of social science to specialized sciences focused on short-term processes rather than long-term change over time.” See her *Origins of American Social Science* (Cambridge: Cambridge University Press, 1991), 388.

34 Albert S. Lyons and R. Joseph Petrucelli, *Medicine: An Illustrated History* (New York: H.N. Abrams, 1987), 8–9.

35 Jacalyn Duffin, ed., *Clio in the Clinic: History in Medical Practice* (Toronto: University of Toronto Press, 2004), 5, 21.

36 Georg G. Iggers, *Historiography in the Twentieth Century: From Scientific Objectivity to the Postmodern Challenge* (Hanover, NH: University Press of New England, 1997), 30.

37 Terrence J. McDonald, ed., *The Historic Turn in the Human Sciences* (Ann Arbor, MI: University of Michigan Press, 1996); and Carolyn Steedman, *Dust: The Archive and Cultural History* (Manchester, UK: Manchester University Press, 2001), viii. Dorothy Ross sees this turn to history as a wider return to former areas of concern: “In the late 19th century, the

across a wide variety of disciplines now demonstrate “a striking growth of interest in the concept of the archive” and stress “the centrality of the archive to both the scholarly enterprise and the existence of democratic society.”<sup>38</sup>

### Page Turners

A Canadian literary example illustrates these points. In recent years, an unprecedented number of Canadian novels have been based on archival research. *The Encyclopedia of Literature in Canada*, published in 2002, reflects the deepening impact of archives on literary work and studies. It has a lengthy entry on archives by JoAnn McCaig. (A predecessor volume, published in 1983, did not even have an entry on archives.) McCaig writes that past use of literary archives amounted mainly to publishing letters of literary figures for basic biographical purposes. “However,” she says, “the introduction of new theoretical approaches in the latter half of the 20th century opened new ways of using literary archives for scholarly research.”<sup>39</sup> Recent conferences of archivists and literary scholars have resulted from this new archival emphasis. As Australian literary scholars Maryanne Dever, Sally Newman, and Ann Vickery write, “Archives have suddenly become sexy.” They add, “Once considered the province of only the most dedicated literary scholar or historian, the archive has become something of a crossover success story in Academe and beyond.”<sup>40</sup>

One of Canada’s leading literary figures, Margaret Atwood, who has used archives when writing her own novels, lectured in 1997 on the resurgence of historical fiction in Canada, and praised archivists and librarians as “guardian angels of paper; without them, there would be a lot less of the past than

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social science disciplines had pulled away from biology, historicism, and economics in an attempt to form autonomous disciplines; in the late 20th century, these alternative bases returned, mounting transdisciplinary programs to reclaim the social science field.” See her “Changing Contours of the Social Science Disciplines,” in *The Cambridge History of Science, Volume 7: The Modern Social Sciences*, ed. Theodore M. Porter and Dorothy Ross (Cambridge: Cambridge University Press, 2003), 235.

38 Marlene Manoff, “Theories of the Archive from across the Disciplines,” *portal: Libraries and the Academy* 4, no. 1 (January 2004): 9.

39 William H. New, ed., *The Encyclopedia of Literature in Canada* (Toronto: University of Toronto Press, 2002), 38. See also William Toye, ed., *Oxford Companion to Canadian Literature* (Toronto: Oxford University Press, 1983). McCaig’s own book on Canadian author Alice Munro is an important example of this recent work; see her *Reading In: Alice Munro’s Archives* (Waterloo, ON: Wilfrid Laurier University Press, 2002).

40 For papers delivered at these conferences, see *Journal of Canadian Studies* 40, no. 2 (Spring 2006), a special issue titled “Turning the Knob on Writers’ Closets’: Archives and Canadian Literature in the 21st Century.” See also Kathleen Garay and Christi Verduyn, eds., *Archival Narratives for Canada: Re-Telling Stories in a Changing Landscape* (Halifax and Winnipeg: Fernwood Press, 2011); and Maryanne Dever, Sally Newman, and Ann Vickery, “The Intimate Archive,” *Archives and Manuscripts* 38, no. 1 (2010): 95.



there is, and I and other writers owe them a huge debt of thanks.<sup>41</sup> Given that novels are much more widely read than academic histories, historical novels may well convey more information from archives to far more people, and thus shape more directly their knowledge of the past and themselves. Atwood adds that this archives-based literary work is “about human nature” or self-knowledge, more than conventional knowledge of political or other historical events, although there is that in them. These stories, she says, “are about pride, envy, avarice, lust, sloth, gluttony, and anger,” or areas of human knowledge that one leading American historian suggests historians had left largely unexplored.<sup>42</sup>

Historical fiction is not a new literary phenomenon in Canada or elsewhere. But perhaps the extent of the direct use of archives by its authors is something new. Suzanne Keen sees the emergence of archival research as both a key feature of and means of understanding the plot lines of much recent British fiction, and explains that this arises in part from the experiences of the noteworthy number of novelists who are now doing archival research.<sup>43</sup> These literary works may well also help usher in the archival stage in the history of knowledge by fostering greater popular consciousness of archives as repositories of vital knowledge. The extraordinary recent success of two novels illustrates this point. First, in Swedish novelist Stieg Larsson’s international bestseller *The Girl with the Dragon Tattoo* (Toronto: Penguin Canada, 2008) and the popular movie based on it, Lisbeth Salander, the novel’s protagonist, is a brilliant archival researcher who uses a corporate archives to help uncover a serial murderer whose crimes date to the 1960s.<sup>44</sup> A second important example

41 Margaret Atwood, “In Search of *Alias Grace*: On Writing Canadian Historical Fiction,” *American Historical Review* 103, no. 5 (December 1998): 1513.

42 Ibid., 1516, and John Demos, “In Search of Reasons for Historians to Read Novels ...” *American Historical Review* 103, no. 5 (December 1998): 1529. A number of internationally acclaimed Canadian novelists have made significant use of archives in historical fiction. They include Lawrence Hill, *The Book of Negroes* (Toronto: HarperCollins, 2007), which was dramatized in a six-part Canadian Broadcasting Corporation television series aired in 2015 and is now available on DVD (the “book” is, of course, a naval ledger kept in the National Archives, UK); Michael Ondaatje, *In the Skin of a Lion* (Toronto: McClelland & Stewart, 1987) and *The English Patient: A Novel* (Toronto: Vintage Books of Canada, 1992), the latter also an Oscar-winning film; Frances Itani, *Tell* (Toronto: HarperCollins Canada, 2014); and Aislinn Hunter, *The World Before Us* (Toronto: Doubleday Canada, 2014). From among many other possible examples of literary uses of archives, see David Cheoros, Karen Simonson, and Debbie Marshall, *Her Voice, Her Century: Four Plays about Daring Women* (Victoria, BC: Brindle & Glass Publishing, 2012) for use of the Provincial Archives of Alberta by the playwrights and archivist Simonson.

43 Suzanna Keen, *Romances of the Archive in Contemporary British Fiction* (Toronto: University of Toronto Press, 2001), 28–29, 25, 121.

44 The archival centrepiece of the novel and film may have been inspired in part by Larsen’s own archival pursuit of right-wing extremists in Sweden; see Paul Wilson, “The Archivist: How I Found Stieg Larsson’s Inner Sanctum,” *The Walrus* (March 2011), accessed 27 July 2015, <http://thewalrus.ca/the-archivist/>.

is Dan Brown's *Angels & Demons* (New York: Pocket Books, 2000), which was also an international bestseller and popular movie. Like Salander, this novel's protagonist (Robert Langdon) is an exceptional archival researcher. The plot hinges on his discovery of a key document in the Vatican Secret Archives.<sup>45</sup>

The depth of the "archival turn" in various academic and other endeavours, such as literary studies, and its impact on knowledge, needs further study. But we may have reached a point when archives are contributing more than ever before to what is known about nature, society, and our personal pasts. The academic historians' contribution to knowledge has now been greatly supplemented by more popular historical works, and both genres have been reliant on archives.<sup>46</sup> There has been a wave of new interest in genealogy based on archival sources as people seek greater self-, family, and community understanding. Knowledge of social injustices of many kinds and means of attempting to resolve them have also drawn heavily on archives and prompted creation of archives. Access to archives and knowledge of the results of such uses have been carried far and wide through the various media, including the powerful new means provided by digitization and the Internet, as well as "older" media such as films. Celebrated motion pictures have perhaps informed more people than ever about historical topics such as the agonizing struggles of George VI to fulfill his duties despite a severe speech impediment, as depicted in the Oscar-winning film *The King's Speech*. It was based in part on archival materials, as is an accompanying book. And the centrepiece of the film, the speech, is, of course, an archival record.<sup>47</sup>

### More Good Turns

Perhaps the most striking evidence that we may be entering the archival stage in the history of knowledge comes from where it might be least expected – the realms of science and medicine, which are making their own significant

45 In the wake of such attention from Brown and others, which was not always welcome, the Vatican decided to increase publicity for its archives. It offered media tours and published a richly illustrated (with colour photographs) large-format book about the archives for a general readership; see Luca Becchetti et al., *The Vatican Secret Archives* (Brussels: VdH Books, 2009).

46 In Canada, the work of historian Charlotte Gray is noteworthy. She won the 2003 Pierre Berton Award for distinguished achievement in popularizing Canadian history. She is a member of the Order of Canada and a Fellow of the Royal Society of Canada (RSC). As a member of the RSC's expert panel on the future of Canadian archives and libraries, Gray spoke passionately about the importance of archives in her work; see Patricia Demers et al., *The Future Now: Canada's Libraries, Archives, and Public Memory* (Ottawa: Royal Society of Canada, November 2014), 80–84.

47 Mark Logue and Peter Conradi, *The King's Speech: How One Man Saved the British Monarchy* (Toronto: Penguin Group, 2010).

“archival turn.” For example, a variety of scientific studies related to climatology, geomagnetism, seismology, hydrology, and environmental protection in areas such as oceanography and wildlife management, all based on archives, have come to the fore in recent years.<sup>48</sup> This is true particularly in the field of medical research, wherein major developments based on archives have reminded researchers that “science and history were interwoven.”<sup>49</sup> The epidemiological researchers who made that comment were referring to the earliest of a series of studies that had drawn some remarkable associations between fetal or early childhood trauma and adverse health conditions affecting those children later in life. A study of famine in the Netherlands was the oldest example they cited. It examined the impact of the wartime famine in the western Netherlands over the winter of 1944–45, when Nazi forces blocked shipments of food supplies. Researchers in the 1970s wanted to study the possible effects of the famine on the health of people who were in utero during that time. The initial study showed a link between famine pregnancy and greater likelihood of later-life obesity. Spurred by such findings, a series of studies was done across the rest of the 20th century and into the early 21st century. These studies relied on “comprehensive medical records” created during the famine and held in various Dutch archives, including the City of Amsterdam

- 48 Starkey, Holm, and Barnard, eds., *Oceans Past*, 3; Julien Fréchet, Mustapha Meghraoui, and Massimiliano Stucchi, eds., *Historical Seismology: Interdisciplinary Studies of Past and Recent Earthquakes* (Dordrecht, NL: Springer, 2008); Public Broadcasting Service (PBS), *Nova*, “Magnetic Storm,” aired 18 November 2003, transcript accessed 13 July 2015, [http://www.pbs.org/wgbh/nova/transcripts/3016\\_magnetic.html](http://www.pbs.org/wgbh/nova/transcripts/3016_magnetic.html); Jill Delaney, “An Inconvenient Truth? Scientific Photography and Archival Ambivalence,” *Archivaria* 65 (Spring 2008): 75–95; A.J.W. Catchpole and D.W. Moodie, “Archives and the Environmental Scientist,” *Archivaria* 6 (Summer 1978): 113–36; and H. Hamandawana, F. Eckardt, and R. Chanda, “Linking Archival and Remotely Sensed Data for Long-Term Environmental Monitoring,” *International Journal of Applied Earth Observation and Geoinformation*, 7, no. 4 (December 2005): 284–98; Javier G.P. Gamarra and Richard V. Solé, “Bifurcations and Chaos in Ecology: Lynx Returns Revisited,” *Ecology Letters* 3, no. 2 (March 2000): 114–21. And the Venetian state archives returns in a new role to assist marine scientists’ efforts to study ways of protecting the city against flooding and sea surges. F. Madricardo and S. Donnici, “Mapping Past and Recent Landscape Modifications in the Lagoon of Venice Through Geophysical Surveys and Historical Maps,” *Anthropocene* 6 (June 2014): 86–96. For other technical uses of archives, such as in engineering, see Jenara Franklin, “The Creation of Pictorial Order: Developing a Records Management System for Manitoba Hydro Corporate Photographs” (MA thesis, University of Manitoba, 2009), and at the City of Thunder Bay (Ontario) Archives, see Brent Linton, “Archives Track Infrastructure History,” *Chronicle-Journal* (9 April 2015). For architecture, see Alice Carey, “The Importance of Construction Documents to Restoration Architects,” *American Archivist* 59, no. 2 (Spring 1996): 176–84. (This article is part of a special issue of the journal devoted to architectural archives.)
- 49 Ezra Susser, Hans W. Hoek, Alan Brown, “Neurodevelopmental Disorders after Prenatal Famine: The Story of the Dutch Famine Study,” *American Journal of Epidemiology* 147, no. 3 (February 1998): 216.

Archives. They enabled people born then to be identified. The researchers found an array of health problems among those who were in utero during the famine. They discovered greater than typical incidences of cardiovascular disease, diabetes, obesity, and cancer. As medical researchers have noted, the Dutch study “ultimately produced one of the most important contributions of post–World War II epidemiology.”<sup>50</sup>

Similar studies were undertaken later in Britain, Sweden, and Finland, which confirmed the patterns in the Dutch results and moved in some striking new directions. The upshot, as British epidemiologist David Barker recently wrote, is that “development of the hypothesis that adverse conditions *in utero* and during infancy increase the risk of cardiovascular disease in later life required epidemiological studies of a kind never undertaken before. It was necessary to find records of birth weight and living conditions during infancy for people born at least 60 years ago and to link these to their current cardiovascular health.”<sup>51</sup> In the 1980s, British medical researchers working with Barker scoured “the nation’s archives” for evidence to support studies like the Dutch one. They found the largest set of relevant records in the Hertfordshire County Archives, a set also “remarkably complete.” These records were the result of great early-20th-century concern about the health of the British population, and particularly about low birth rates. In 1911, midwife Ethel Burnside and her team of nurses took on the task of providing special help to pregnant mothers in Hertfordshire. They kept careful records of the babies’ identities, weights, development, and illnesses. Barker and his colleagues found results resembling those of the Dutch study – babies who were born small or were small in infancy had as adults higher blood pressure, more diabetes, reduced bone density, more heart defects, and aged more rapidly.<sup>52</sup>

Other studies followed that led to more striking conclusions. In the 1980s in Sweden, preventive health-care specialist Lars Olov Bygren began studying the northern Swedish community of Overkalix for connections between health and nutrition. He was drawn to Overkalix by extraordinary records at the Swedish National Archives. There were birth and death records for centuries and records of harvests, which were especially important because the region had often suffered feast and famine harvest cycles. In his research into these records for the early 20th century, Bygren noticed a phenomenon different

50 L.H. Lumey et al., “Cohort Profile: The Dutch Hunger Winter Families Study,” *International Journal of Epidemiology* 36, no. 6 (2007): 1196–97; A.C.J. Ravelli et al., “Glucose Tolerance in Adults after Prenatal Exposure to Famine,” *Lancet* 351, no. 9097 (17 January 1998): 173–77; Susser, Hoek, and Brown, “Neurodevelopmental Disorders after Prenatal Famine,” 214.

51 David Barker, “The Midwife, the Coincidence, and the Hypothesis,” *BMJ (British Medical Journal)* 327 (December 2003): 1428.

52 *Ibid.*, 1428–30. See also, for overviews, David Barker, “*In Utero* Programming of Chronic Disease,” *Clinical Science* 95 (1998): 115; and Annie Murphy Paul, *Origins: How the First Nine Months before Birth Shape the Rest of Our Lives* (New York: Free Press, 2010), 23–28.

from the findings of previous similar studies. He noticed that there might be a correlation between fetal and early childhood health and not only the children born but also *their* children. He began to ask whether people who were not themselves directly affected by the conditions shaping their grandparents' fetal and early childhood development could somehow have been affected by those conditions even a century afterward.<sup>53</sup>

In 2000, Bygren turned to British geneticist Marcus Pembrey for advice on this question. Pembrey had been working on a puzzling genetic question: why was the same genetic defect causing two very different adverse health outcomes? He could only conclude that something was affecting the genes, "telling" them to behave in one way or the other. Pembrey was not the first to suspect that this was happening in human development, but it was a controversial idea that had not been given a great deal of attention. But Pembrey pressed forward with it in a 1996 paper, one that came to Bygren's attention and resulted in their collaboration.<sup>54</sup>

Pembrey was excited by the initial Swedish findings shown to him by Bygren, and both went to work on the archival data to test further patterns. The data showed the close connection between various phenomena, such as diet during fetal development, and subsequent health problems among the grandchildren of those affected. They published their work in 2001 and 2002, clearly aware of its significance. As Pembrey stated at the time, "We are changing the view of what inheritance is. You can't, in life, in ordinary development and living, separate out the gene from the environmental effect. They're so intertwined."<sup>55</sup> This inheritance process became widely known as epigenetics. Medical researcher Randy Jirtle wrote in 2009 in the inaugural issue of *Epigenomics*, a new journal devoted to the burgeoning field, that "we are clearly entering a new era of biological research" based on long-term studies of "the epigenetic alterations that link environmental exposures during susceptible stages of life to disease formation years later. The field of medicine will be revolutionized by this epigenetic perspective of disease formation – potentially shifting our health care emphasis from therapy to prevention."<sup>56</sup>

53 PBS, *Nova*, "Ghost in Your Genes," aired 16 October 2007, transcript accessed 29 April 2015, [http://www.pbs.org/wgbh/nova/transcripts/3413\\_genes.html](http://www.pbs.org/wgbh/nova/transcripts/3413_genes.html); and WNYC Radio New York, NY, *Radiolab*, "You Are What Your Grandpa Eats," aired 19 November 2012, <http://www.radiolab.org/story/251885-you-are-what-your-grandpa-eats/>.

54 Marcus Pembrey, "Imprinting and Transgenerational Modulation of Gene Expression: Human Growth as a Model," *Acta Geneticae Medicae et Gemellologiae* 45, nos. 1–2 (1996): 111–25.

55 PBS, *Nova*, "Ghost in Your Genes."

56 Randy Jirtle, "Epigenome: The Program for Human Health and Disease," *Epigenomics* 1, no. 1 (October 2009): 13–15.

Other studies proceeded apace during the 2000s to test these emerging relationships between environment, genetics, and disease.<sup>57</sup> Recent Finnish research has pushed the discussion in other important directions. Rather than examining only the biological impact of physical environmental factors such as nutrition on the fetus and infant, Finnish medical scientists and psychologists have been studying the long-term impact of other types of early life trauma. They have examined the adverse health impact of the evacuation of Finnish children from Finland to Sweden and Denmark during the Second World War. The Finnish researchers based their work on records in the Finnish National Archives for the nearly 50,000 children evacuated abroad by the Finnish Government.<sup>58</sup> The researchers found that, as adults, those who had been evacuated as children had more psychiatric disorders and depression, cardiovascular problems, diabetes, and substance abuse, and lower academic test scores than those who were not evacuated. They attributed these outcomes to the trauma of their lengthy separation from their parents at an early age. The researchers conclude that their findings support epigenetic explanations: “Epigenetic changes alter gene expression and they can be either silencing or activating the genes. Data suggest that epigenetic processes underlie relationships between early life events and later metabolic status.”<sup>59</sup>

Archives are thus at the heart of scientific and medical developments of very great significance. Indeed, citing the work of Pembrey, among others, geneticists Adam Handel and Sreeram Ramagopalan, reported in 2010 that epigenetics offers not only new medical possibilities, but also a new understanding of the theory of evolution itself. Epigenetics is bringing back the discussion of environmental influences on the process of evolution, which had been suggested by Lamarck in the early 19th century but was discredited as Darwin’s natural selection hypothesis gained acceptance. Like Pembrey and Jirtle, Handel and Ramagopalan see a major and promising new agenda

57 Ibid., 13–14.

58 Hanna Alastalo et al., “Cardiovascular Health of Finnish War Evacuees 60 Years Later,” *Annals of Medicine* 41, no. 1 (2009): 66–72; Anu-Katriina Pesonen and Katri Räikkönen, “The Lifespan Consequences of Early Life Stress,” *Physiology and Behavior* 106, no. 5 (16 July 2012): 722–77; Anu-Katriina Pesonen et al., “Reproductive Traits Following a Parent–Child Separation Trauma During Childhood: A Natural Experiment During World War II,” *American Journal of Human Biology* 20, no. 3 (May/June 2008): 345–51. Further scientific studies on humans – those who committed suicide and had experienced child abuse – were consistent with the epigenetic findings in animals. See Patrick O. McGowan et al., “Epigenetic Regulation of the Glucocorticoid Receptor in Human Brain Associates with Childhood Abuse,” *Nature Neuroscience* 12 (22 February 2009): 345–46. A related scientific study is I. Shalev et al., “Exposure to Violence During Childhood is Associated with Telomere Erosion from 5 to 10 Years of Age: A Longitudinal Study,” *Molecular Psychiatry* (24 April 2012): 1–6.

59 Alastalo et al., “Cardiovascular Health of Finnish War Evacuees 60 Years Later,” 69–71; and Pesonen and Räikkönen, “The Lifespan Consequences of Early Life Stress,” 722.

for medical research as a result of epigenetics: “The most exciting part of epigenetics in modern medicine is the possibility of intervening at the junction between the genome and the environment, as unlike the DNA sequence, epigenetic changes are reversible. Research should now concentrate on revealing which conditions arise as a result of epigenetic changes and whether it is possible to intervene in this process to prevent disease or restore health.”<sup>60</sup>

These medical researchers are among a number who have used archives in recent years to examine health-care concerns. Archival research has been done in connection with pandemics such as influenza, Alzheimer’s disease, leukemia, skin cancer, post-traumatic stress disorder among war veterans, suicide, autism, diabetes, ophthalmology, the origins of AIDS, vaccines, childhood obesity, and childhood infectious diseases.<sup>61</sup>

- 60 Adam E. Handel and Sreeram V. Ramagopalan, “Is Lamarckian Evolution Relevant to Medicine?” *BMC Medical Genetics* 11, no. 73 (May 2010), accessed 27 July 2015, <http://www.biomedcentral.com/1471-2350/11/73>. For more on the discussion of epigenetics and evolution, see David Crews and John A. McLachlan, “Epigenetics, Evolution, Endocrine Disruption, Health, and Disease,” *Endocrinology* 147, no. 6 (July 2013): S4–10; and Eva Jablonka and Gal Raz, “Transgenerational Epigenetic Inheritance: Prevalence, Mechanisms, and Implications for the Study of Heredity and Evolution,” *Quarterly Review of Biology* 84, no. 2 (June 2009): 131–76. For a recent monograph summary, see Nelson R. Cabej, *Epigenetic Principles of Evolution* (London: Elsevier, 2012). Pembrey was anxious about publicizing his views of epigenetics because he felt they would bring severe criticism from those who might believe he was resurrecting the discredited Lamarckian version of evolution; see Howard Wolinsky, “Paths to Acceptance. The Advancement of Scientific Knowledge is an Uphill Struggle Against ‘Accepted Wisdom,’” *EMBO Report* 9, no. 5 (May 2008): 416–418. For *Time* magazine’s cover story on Pembrey and Bygren’s work, see John Cloud, “Why Your DNA Isn’t Your Destiny,” *Time* (6 January 2010), accessed 30 April 2015, <http://content.time.com/time/magazine/article/0,9171,1952313,00.html>.
- 61 J.S. Oxford et al., “World War I May Have Allowed the Emergence of ‘Spanish’ Influenza,” *Lancet: Infectious Diseases* 2, no. 2 (February 2002): 111–14; D. Ann Herring and Alan D. Swedlund, eds., *Human Biologists in the Archives: Demography, Health, Nutrition and Genetics in Historical Populations* (Cambridge: Cambridge University Press, 2003); Gari-Anne Patzward and Sister Carol Marie Wildt, “The Use of Convent Archival Records in Medical Research: The School Sisters of Notre Dame Archives and the Nun Study,” *American Archivist* 67, no. 1 (Spring/Summer 2004): 86–106; L. Kinlen, “Childhood Leukaemia and Ordnance Factories in West Cumbria During the Second World War,” *British Journal of Cancer* 95, no. 1 (July 2006): 102–6; Katja Kojo et al., “Population Exposure to Ultraviolet Radiation in Finland 1920–1995: Exposure Trends and a Time-series Analysis of Exposure and Cutaneous Melanoma Incidence,” *Environmental Research* 101, no. 1 (May 2006): 123–31; Edgar Jones et al., “Post-Combat Syndromes from the Boer War to the Gulf War: A Cluster Analysis of Their Nature and Attribution,” *BMJ (British Medical Journal)* 324 (February 2002): 321; Edgar Jones, “Historical Approaches to Post-Combat Disorders,” *Philosophical Transactions of the Royal Society B (Biological Sciences)* 361 (April 2006): 533–42; Chryssa N. McAlister et al., “The Halifax Disaster (1917): Eye Injuries and Their Care,” *British Journal of Ophthalmology* 91, no. 6 (June 2007): 832–35; and (microbiologist) Jacques Pepin, *The Origins of AIDS* (Cambridge: Cambridge University Press, 2011). For three important Danish studies based on school records in the City of Copenhagen Archives, see Marie Villumsen et al., “Risk of Lymphoma and Leukaemia after Bacille

## Their Turn

The Finnish research has relevance to Canada, where childhood trauma is at the heart of the principal current social problem arising from our history – finding a more just basis for the relationship between Indigenous and non-Indigenous people.<sup>62</sup> This troubled relationship is perhaps epitomized in the residential schools experience. Indigenous children were forcibly removed from their parents and required to live in residence at the schools. The schools were created to erase the children's Indigenous culture. Many were physically, emotionally, and sexually abused. Housing, food, and medical care were often very poor. Many died. In later life, survivors exhibited many of the health problems seen among the wartime Finnish child evacuees. Neuroscientists and psychologists have begun to ask whether the kinds of intergenerational transmission of the effects of early life trauma seen elsewhere could be involved here too, including through epigenetic processes. They see the trauma arising from “historical loss,” as they call it, including “loss of language, culture, land, tradition and respect for traditional ways.”<sup>63</sup>

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Calmette-Guérin and Smallpox Vaccination: A Danish Case-Cohort Study,” *Vaccine* 27, no. 49 (16 November 2009): 6950–58; L. Aksglaede et al., “Age at Puberty and the Emerging Obesity Epidemic,” *PLoS ONE* 4, no. 12 (24 December 2009): e8450; and P. Bager et al., “Age at Childhood Infections and Risk of Atopy,” *Thorax* 57, no. 5 (May 2002): 379–82. For a study of the medical research value of the Danish school records, see Jennifer L. Baker et al., “Cohort Profile: The Copenhagen School Health Records Register,” *International Journal of Epidemiology* 38, no. 3 (June 2009): 656–62. I am indebted to Elisabeth Bloch of the City of Copenhagen Archives for these leads to medical research there.

- 62 The Finnish researchers see their work as a contribution to the study of a much wider current problem – the adverse health consequences for children who have been exposed to psychological, physical, or sexual abuse, and family dysfunction owing to mental illness or criminal and violent behaviour. See Pesonen and Rääkkönen, “The Lifespan Consequences of Early Life Stress,” 5. For an example of psychiatric research using archives (the American National Archives) into *adult* trauma and its relationship to contemporary health issues, see Judith Pizarro, Roxanne Cohen Silver, and JoAnn Prause, “Physical and Mental Health Costs of Traumatic War Experiences among Civil War Veterans,” *Archives of General Psychiatry* 63, no. 2 (February 2006): 193–200.
- 63 See Amy Bombay, Kim Matheson, and Hymie Anisman, “Intergenerational Trauma: Convergence of Multiple Processes Among First Nations Peoples in Canada,” *Journal of Aboriginal Health* (November 2009): 12, 19–24. For a different example of the use of archives in medical research related to Indigenous people in Canada, see Robert A. Hegele, “Genetics, Environment and Type 2 Diabetes in the Oji-Cree Population of Northern Ontario,” *Canadian Journal of Diabetes* 27, no. 3 (2003): 256–61. I thank Anne Lindsay of the National Centre for Truth and Reconciliation Archives at the University of Manitoba for this last reference. The two major historical studies of the residential schools experience in Canada are James R. Miller, *Shingwauk's Vision: A History of Native Residential Schools* (Toronto: University of Toronto Press, 1996), and John S. Milloy, *A National Crime: The Canadian Government and the Residential School System, 1879–1986* (Winnipeg: University of Manitoba Press, 1999).



This “loss” is, in effect, a loss of much of the Indigenous peoples’ own *archive*. The residential schools policy was about accelerating this process of replacing one archive for another, by severing the children’s connection to the people (parents and grandparents and their memories and teachings), places (family homes and community lands), objects, languages, drawings, beliefs, activities, and traditions that gave access to the older archive and conveyed it to the next generation. It was about initiating the children into the new archives, of the new society, through access to *its* tools of European-style literacy and documentation.

Indigenous people, of course, resisted the destruction of their archive and have been countering the Euro-Canadian archive in various ways. They kept the older archive alive – perhaps symbolized in residential school survivor Shirley Williams’ father’s powerful reminder to her as she left home in 1949 to begin her time at the school: “Do not *forget* who you are.”<sup>64</sup> Indigenous people learned Euro-Canadian documentation techniques in order to communicate their views more effectively to a Euro-Canadian audience. The Indigenous rights movement of the late 20th century has spurred this archival development enormously, as Indigenous people engaged Euro-Canadian society through the latter’s archives to assert treaty rights, land and other legal claims, and sought to correct the historical record and use it to obtain financial compensation for injustices such as the residential schools policy. They began to re-inscribe that Euro-Canadian record, to see and interpret it in new ways – to subvert the story it supposedly told of “progress” within Euro-Canadian terms, and to read it against the grain of the Euro-Canadian “truth” and see in it new truths. Indigenous curator Jeff Thomas does so in comments on photographs taken by Euro-Canadians around 1900, in attempts to document the successful transition of Aboriginal children into the new society through the schools. Thomas writes, “There are new stories waiting to come out of the photographs.... Rather than dismissing them simply as images of colonialism or racism, we can choose, as Aboriginal people, to make them our own, to add them to our stories, and to give the children of residential schools a voice.”<sup>65</sup> These photographs were intended to be the children’s entry point into their new Euro-inspired archives. Instead, they have been recontextualized and thus recreated as part of the new *Indigenous* archives.

Indigenous people have been trying to overcome an information deficit and communication gap in their relationship with the rest of Canadian society,

64 National Archives of Canada, National Library of Canada, Aboriginal Healing Foundation, and Legacy of Hope Foundation, *Where Are the Children? Healing the Legacy of the Residential Schools/Que sont les enfants devenus? L'expérience des pensionnats autochtones* (Ottawa, 2003), 36 (emphasis added), accessed 30 April 2015, <http://www.legacyofhope.ca/home>.

65 *Ibid.*, 29.

which is reflected in their efforts to reinterpret the Euro-Canadian archive about them and to strengthen their own archive. The Truth and Reconciliation Commission of Canada (TRC) is a prime example of this effort because at the heart of its mandate is creation of an archives. The aim is healing and reconciliation through archiving and communicating information about the residential school experience. The TRC is to create a new archive, one able to provide the broader range of intellectual resources that will enable Indigenous people to enter more effectively into ongoing dialogue with the non-Indigenous community. In this way, all might be better informed, rights better protected, justice better pursued, and over time a more healthy Indigenous/non-Indigenous relationship in Canada achieved.<sup>66</sup>

This recent Canadian experience adds great weight to the suggestion that we may be entering much more fully than ever before the archival stage in the history of knowledge. Archives are at the heart of Canada's most serious social challenge, as our knowledge of it comes to us from archives and our hope to meet it depends on archives. And this social challenge is also faced by many other countries whose Indigenous people are turning to their own and others' archives to redress long-standing grievances. This problem has opened to new awareness the long overlooked and often suppressed massive worldwide Indigenous archive, with all that it might now bring from the experiences of Indigenous people to knowledge today.

### The Next Turn

There are still serious obstacles in the way of entering more fully the archival stage in the history of knowledge. The main one in my view is the inability thus far, some 50 years into the digital age, to archive the born-digital record created by institutions and in personal life. The future of archives as we know them depends on archiving that record.<sup>67</sup> Underlying that problem, at its root, is profound lack of public understanding of the uses of archives and the work of knowledge creation that archivists do. How tragic it would be – just as those uses finally become central to society's principal concerns and the well-being

66 As residential school survivor Shirley Williams says, "I think when we deal with the past [of the residential schools], then the people will move on but first we must talk about it.... We have begun to tell our story – our history – and we want to tell it in our own words to the world, so that this will never happen to any of the other nations in the world.... Our children want a better life and we want them to have a better life than we did. We want to feel well and be accepted. We want to feel that we have something to offer in this world and not be known as a sick Nation." *Ibid.*, 50–51.

67 For further discussion of possible approaches to this problem, see Tom Nesmith, "The Missing Piece: Towards New Partnerships with Users of Archives," *Canadian Issues/Thèmes canadiens: Towards a New Blueprint for Canada's Recorded Memory*, special edition (Spring 2014), 54–58.

of the human community – for this ignorance to thwart their full flowering. And yet we have never been in a better position to deal with this challenge than now, through knowing more about the many remarkable uses of archives that have emerged in recent years. Archives have never been as widely used and valuable as they have become in the past 50 years, based on the analog record. There is every reason to believe that this vital role will continue to expand – except if we remain unable to win support for archiving the now principal means of communication in our time and the foreseeable future – the born-digital record. May Thomas Symons’ observation today also be a prediction about the emerging archival stage in the history of knowledge, and may *Archivaria* over the next 40 years lead its realization.

*Tom Nesmith is a professor in the Master’s Program in Archival Studies in the Department of History, University of Manitoba, and has published widely on archival concepts and issues. He is a past general editor of Archivaria and is a Fellow of the Association of Canadian Archivists.*