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Archivists and Time: Conceptions of Time and Long-Term Information Preservation among Archivists

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Introduction

The work of archivists and archival scientists essentially involves two things: information and time. Archives preserve and structure recorded information in order to make it useful later for users other than the original ones. Sometimes the preservation has a time limit, but more often it does not. When we say that records should be “preserved” we often implicitly or explicitly mean “forever,” but we seldom discuss the implications of such a statement. However, in one specific case of information preservation the real meaning of terms like “forever” and “long-term preservation” is highly relevant—information concerning nuclear waste.

High-level nuclear waste has to be kept separate from humans and the environment until it is no longer dangerous. A time frame often mentioned is 100,000 years.¹ Records about the repository and its contents must be preserved and available for just as long, in case people need them for a number of possible reasons. The challenge of preserving records for such an immense period of time has several dimensions; some are practical in nature, such as the choice of conservation media and the design of the message, and by now there is a fairly substantial body of literature on these issues.² One rather surprising feature of the literature on nuclear waste information is the lack of suggestions for digital solutions. Almost all information today is created digitally, but most proposals concerning nuclear waste records deal with paper archives and stone monuments.³ A possible reason for this bias is the prevailing uncertainty as to the long-term sustainability of digital records. This uncertainty may, however, prove transient and the preference for analog formats may prove unfounded. We stand today in the midst of a radical transformation of methods for information preservation, and there is reason to assert that the age of digital memory has only just begun.⁴

Extremely long-term information preservation is, however, only partly a matter of technology; it is just as much about thought patterns. This raises questions about ways to transmit memories and knowledge to future generations. The extreme time perspective also points to more fundamental issues about our capacity to know anything at all about what kind of society our descendants one hundred or one thousand generations from now will have created, what technical and scientific knowledge they will possess, and what their information needs will be.

¹ See, for example, Radio Sweden, “New Tests of Nuclear Waste Capsules’ Lifespan,” March 5, 2010, <https://sverigesradio.se/sida/artikel.aspx?programid=2054&artikel=3488844>; Michael Stothard, “Nuclear Waste: Keep Out for 100,000 Years,” *Financial Times*, July 14, 2016, <https://www.ft.com/content/db87c16c-4947-11e6-b387-64ab0a67014c>; Marie Jamet, Alice Cuddy, and Alice Tidey, “What Will a Nuclear Waste Warning Look Like in 100,000 Years’ Time?,” *Euronews*, November 26, 2018, <https://www.euronews.com/2018/11/16/nuclear-waste-the-conundrum-over-how-to-warn-future-generations>.

² OECD Nuclear Energy Agency, *Preservation of Records, Knowledge and Memory across Generations: Reference Bibliography within NEA RKM Project* (NEA/RWM(2011)13/REV2, 2013), February 28, 2013, Paris: OECD; Marcos Buser, *A Literature Survey on Markers and Memory Preservation for Deep Geological Repositories*, Nuclear Energy Agency, Radioactive Waste Management Committee (NEA/RWM/R(2013)5), December 17, 2013.

³ Reine Rydén, “Extreme Long-Term Preservation of Information—Who Cares?,” *Information Research* 23, no. 1 (2018), <http://www.informationr.net/ir/23-1/paper782.html>.

⁴ Abby Smith Rumsey, *When We Are No More: How Digital Memory Is Shaping Our Future* (London: Bloomsbury, 2016).

The present study does not intend to solve the “forever problem,”⁵ but takes it as a starting point for an exploration of what long-term perspectives imply for the archival profession.

The last decades have seen extensive discussion of the concept of collective memory (or social memory; the two terms are often used synonymously) in archival science literature.⁶ Several authors question the way in which the concept of memory is used when, for example, archival institutions call themselves “the memory of society.” These writers discuss the relationship between remembering and forgetting, and emphasize that collective memories are social constructs in which records sometimes play an important role, although in interaction with many other means of communication and memory-making.⁷ The discussion about collective memory concerns many other disciplines as well, including history, philosophy, psychology, sociology, and political science.⁸

Unlike memory, the concept of time is scarcely treated in archival literature, despite its relevance for the archival profession. In 1989, James M. O’Toole discussed how the idea of permanent archival information has changed over time, varying between a realistic goal and an unattainable ideal.⁹ More recently, a study of perceptions of time among heritage professionals and archaeologists came to the rather disturbing conclusion that their future planning is vague and lacks reflection. Either they are only thinking a couple of generations into the future, or they imagine a kind of indefinite eternity, that “will essentially be a continuation of the present.”¹⁰ There are so far no empirical studies aimed specifically at archivists and their perceptions of time.

The present study will analyze conceptions among archivists about time and information preservation, especially in relation to very long periods of time. The studies of Holtorf and Högberg mentioned above used Ludwik Fleck’s classic concepts of *thought collective* and *thought style* in their analysis of heritage professionals. A thought collective is, according to Fleck, “a community of persons mutually exchanging ideas or maintaining intellectual

⁵ Chris Heaney, “The ‘Forever Problem’: Nuclear Waste as Information,” *iConference 2013 Proceedings* (2013): 659–61.

⁶ Trond Jacobsen, Ricardo L. Punzalan, and Margaret L. Hedstrom, “Invoking ‘Collective Memory’: Mapping the Emergence of a Concept in Archival Science,” *Archival Science* 13, nos. 2–3 (2013): 217–51; Barbara L. Craig, “Selected Themes in the Literature on Memory and Their Pertinence to Archives,” *American Archivist* 65, no. 2 (2002): 276–89.

⁷ Laura Millar, “Touchstones: Considering the Relationship between Memory and Archives,” *Archivaria* 61 (2006): 105–26; Randall C. Jimerson, *Archives Power: Memory, Accountability, and Social Justice* (Chicago: Society of American Archivists, 2009); Margaret Hedstrom, “Archives and Collective Memory: More Than a Metaphor, Less Than an Analogy,” in *Currents of Archival Thinking*, edited by Terry Eastwood and Heather MacNeil (Santa Barbara: Libraries Unlimited, 2010), 163–79; Terje Rasmussen, “Devices of Memory and Forgetting: A Media-Centred Perspective on the ‘Present Past,’” in *The Archive in Motion: New Conceptions of the Archive in Contemporary Thought and New Media Practices*, edited by Eivind Røssaak (Oslo: Novus Press, 2010), 109–23.

⁸ Siobhan Kattago, ed., *The Ashgate Research Companion to Memory Studies* (Farnham, Surrey: Ashgate, 2015).

⁹ James M. O’Toole, “On the Idea of Permanence,” *American Archivist* 52, no. 1 (1989): 10–25.

¹⁰ Cornelius Holtorf and Anders Högberg, “Communicating with Future Generations: What Are the Benefits of Preserving Cultural Heritage? Nuclear Power and Beyond,” *European Journal of Post-Classical Archaeologies* 4 (2014): 349. See also Högberg et al., “No Future in Archeological Heritage Management?” *World Archaeology* 49, no. 5 (2017): 639–47.

interaction.”¹¹ In doing so, they develop specific ways of speaking and thinking—their own thought style. However, individuals in the collective are usually unaware of their thought style.¹² Archivists are a limited group of heritage professionals and can be described as a thought collective, consisting of individuals who exchange ideas on practical and theoretical aspects of their profession, thereby jointly developing thoughts that none of the individuals would have developed on their own. Their common thoughts probably do not explicitly include conceptions of the nature of time and the distant future, judging by the absence of these concepts in archival literature. However, it should be possible to uncover implicit thoughts about these matters, given the importance of long-term information preservation for everything that archivists do.

The research questions are the following:

- How do archivists conceive of time in general and the distant future in particular?
- What do archivists think about the role of archives, now and in the future?
- What do archivists think about the possibilities of preserving information over very long periods of time?
- How (if at all) do archivists’ perceptions of time differ from those of other people?

This empirical study is based on interviews, analyzed with a phenomenographic method that is explained below. Before that, a short overview of the literature on the concept of time develops the theoretical framework for the study.

The Concept of Time

Continuity and discontinuity

A key work on time and memory is *Time Maps* by historian Eviatar Zerubavel. The author surveys how people and societies structure time, thereby creating perceptions of historical continuity and discontinuity. He points out that collective memory presupposes what he terms a *mnemonic community*, that is, a group with something in common to remember. Social norms about what is worth remembering and what can or should be forgotten determine what individuals and groups remember. Mnemonic communities focus their memories on important events in the past, and these memories are supported by commemorative rituals such as anniversaries and centennials that create connections between past and present.¹³

History is usually perceived as a series of eventful periods with intervening, sometimes long periods when nothing important happens. People still tend to strive for a coherent historical narrative, a sense of gaplessness or an unbroken chain in the past. One example is the “uninterrupted” chain of popes from Saint Peter to today, although there have been periods with

¹¹ Ludwik Fleck, *Genesis and Development of a Scientific Fact* (1935; repr. Chicago: University of Chicago Press, 1979), 39.

¹² Fleck, *Genesis and Development*, 41; Cornelius Holtorf and Anders Högberg, “Contemporary Heritage and the Future,” in *The Palgrave Handbook of Contemporary Heritage Research*, edited by Emma Waterton and Steve Watson (Basingstoke, UK: Palgrave Macmillan, 2015), 511.

¹³ Eviatar Zerubavel, *Time Maps: Collective Memory and the Social Shape of the Past* (Chicago: University of Chicago Press, 2003), 4, 28–29.

no pope or several competing popes.¹⁴ It is easy to foresee that, just as there are gaps in historical chains, there will be gaps in the future.

Distances in time can be perceived as more manageable if we think in terms of generations. If a generation covers an average of twenty-five years, then the life of Christopher Columbus is only a little more than twenty steps away.¹⁵ Swedish archeologist Bo Gräslund developed a similar line of reasoning as early as 1980, although he counted with thirty-year generations. We are all familiar with a family unit consisting of parents, children, and grandchildren. The distance to the birth of Christ is just over twenty-two such family units. Three hundred and thirty-three family units have passed since the last Neanderthals walked on Earth.¹⁶ This way of thinking works forward in time as well, but 100,000 years (1,111 family units) is still hard to grasp. Gregory Benford points out that most people rarely reflect on a future stretching beyond their own grandchildren's lives.¹⁷ According to biologist Edward Wilson, this has an evolutionary explanation. Short-term planners have simply managed to survive longer and have more offspring than more altruistic long-term planners.¹⁸

Temporal depth

A useful concept describing people's ability to think back and ahead in time is *temporal depth*. Allen Bluedorn defines it as "the temporal distances into the past and future that individuals and collectivities typically consider when contemplating events that have happened, may have happened, or may happen."¹⁹ Psychological research shows that most people find it harder to think far ahead than far back in time. As a result, they tend to avoid issues extending far into the future and confine themselves to short-term planning. Generally, they also tend to think about the future as an extension of the past. However, individuals with long temporal depth backward also have longer temporal depth forward. Knowledge of history thus leads to a greater ability to imagine the future, although not necessarily a better ability to make predictions.²⁰

An unusual example of temporal depth comes from medieval England. In the year 1386, Oxford University planted oak trees intended to replace the College Hall roof beams in the future. The restoration was finally carried out in the nineteenth century, using these specific trees.²¹ A similar but later example is the oak plantation on the Swedish island of Visingsö. To secure the navy's future needs in timber, oaks were planted on a large area in the 1830s. However, by the time the trees were ready for logging, the era of wooden war ships had long since come to an end.²² This ambitious but failed long-term planning illustrates the difficulties of predicting future technical developments.

¹⁴ Ibid., 61.

¹⁵ Ibid., 58.

¹⁶ Bo Gräslund, *Perspektiv på vår äldsta historia* (Stockholm: Skolöverstyrelsen, 1980), 1–2.

¹⁷ Gregory Benford, *Deep Time: How Humanity Communicates across Millennia* (New York: Avon, 1999), 9.

¹⁸ Edward O. Wilson, *The Future of Life* (New York: Alfred A. Knopf, 2002), 40.

¹⁹ Allen C. Bluedorn, *The Human Organization of Time: Temporal Realities and Experience* (Stanford, CA: Stanford University Press, 2002), 114.

²⁰ Ibid., ch. 5.

²¹ Ibid., 254; Benford, *Deep Time*, 26.

²² Lars Kardell, *Skogshistorien på Visingsö* (Uppsala: Sveriges lantbruksuniversitet, 1997).

Bluedorn suggests that temporal depth has a cultural dimension. When the central council of chiefs of the Iroquois Onondaga Nation makes decisions, the perspective is unusually long-term. “We consider: will this be to the benefit of the seventh generation? That is a guideline.”²³ The cultural dimension also becomes visible in connection with time capsules. The habit of depositing a message for the future under the cornerstone of a building dates back 5,000 years to ancient Sumer. But modern time capsules with a predetermined opening date are a recent phenomenon. The first one was deposited in 1876 at the Philadelphia Centennial Exposition and scheduled for opening in 1976.²⁴ One hundred years have continued as a standard time for American time capsules, but in Japan some time capsules are scheduled for opening after five thousand years. When Americans hear this, they tend to react with amazement.²⁵

Temporal depth can also vary over time. David Lowenthal argues that future horizons have diminished in recent decades. A serious interest in and concern for the future formed during the late eighteenth century, when people in general became more aware of historical developments and the advancement of science. This awareness also brought with it a sense of responsibility for future generations, but during the latter half of the twentieth century, according to Lowenthal, people lost faith in progress. They began to attach greater importance to the immediate present, and concern for the more distant future faded away.²⁶

Our difficulties imagining large time distances are greatest when human society is concerned. When it comes to sciences such as geology, astronomy, and developmental biology, time scales of billions of years cause less trouble for the human mind.²⁷ The problem with imagining the distant future of society has to do with our need for a sense of continuity. The further forward in time, the more and more uncertain and difficult to maintain continuity becomes. “Meaning is lost when there is, in the case of the future, an anticipated loss of continuity—going too far ahead to where too many things have changed, where too few things, perhaps nothing, will be familiar.”²⁸

Deep time

The concept *deep time* refers to timescales far beyond human experience. The term is also used in connection with attempts to send messages to a distant future, for instance about nuclear waste. Benford makes a distinction between different types of deep time messages. The first kind, designated by Benford as *High Church*, comprise manifestations of the culture of powerful rulers, such as pyramids, temples, cathedrals, and other monuments. A second type that also existed in antiquity, *Kilroy Was Here*, comprise messages from individuals who want

²³ Oren Lyons, “An Iroquois Perspective,” in *American Indian Environments: Ecological Issues in Native American History*, edited by Christopher Vecsey and Robert W. Venables (Syracuse, NY: Syracuse University Press, 1980), 173; Bluedorn, *The Human Organization of Time*, 136.

²⁴ William E. Jarvis, *Time Capsules: A Cultural History* (Jefferson, NC: McFarland & Co., 2003), 9–11.

²⁵ Bluedorn, *The Human Organization of Time*, 119.

²⁶ David Lowenthal, “Stewarding the Future,” *Norsk Geografisk Tidsskrift—Norwegian Journal of Geography* 60, no. 1 (2006): 15–23; Lowenthal, “The Past of the Future: From the Foreign to the Undiscovered Country,” in *Manifestos for History*, edited by Keith Jenkins, Sue Morgan, and Alun Monslow (London: Routledge, 2007), 205–19.

²⁷ However, many people have trouble really grasping the timescale involved in geological and biological processes, even if they manage to order events correctly on a timeline. See Richard D. G. Irvine, “Deep Time: An Anthropological Problem,” *Social Anthropology* 22, no. 2 (2014): 164.

²⁸ Bluedorn, *The Human Organization of Time*, 194.

to leave some trace, if only their names, to the world after they are gone.²⁹ However, these two types are not always, like time capsules, consciously intended as messages to the future. Another modern and highly conscious type of deep time messages are carried aboard spacecraft and intended for civilizations on other planets.³⁰

A well-known deep time project is the Waste Isolation Pilot Plant (WIPP), a nuclear waste depository in New Mexico. In the early 1990s, a team of experts from a range of disciplines gathered to figure out a suitable design for a warning message for future generations. The result was a plan including massive earthworks, deterring markers and images, as well as text in several languages.³¹

The terms temporal depth and deep time sound similar, and in some ways they are interrelated. It is easy to imagine that a long temporal depth coincides with a good ability to plan deep time messages. Whether this really is the case is however an empirical, and still unanswered, question.

A-series and B-series

Many philosophers have debated the fundamental question of what time actually is. The concepts A-series and B-series (initially formulated by John McTaggart in 1927), also labeled the A-theory and the B-theory of time, are a main feature of that discussion. The essence of the A-series is the passage of time. Events in the future come closer, become contemporary and disappear in the past. In an extreme A-series view, nothing exists except the present. The past has created the conditions for what happens now, but it does not exist in itself, and neither does the future. The B-series, on the other hand, is linear, stable, and strictly chronological. Events are classified by whether they occur before, after, or at the same time as each other. One event follows the other, but time itself does not move.³²

There is of course a connection between the two series. Whether a particular event is past, present, or future depends on its connection to a point in time. The A-series thus needs a B-series “backup.” But one can also argue that the A-series is a prerequisite for the idea of change and therefore the most fundamental. Philosophers have discussed this paradox without reaching agreement on which time concept is the “correct” one. The issue is, however, not only a philosophical matter. How we think of time is important in many contexts, not least in the humanities and social sciences. Everyone meets their world according to the A-series model, but everyone also creates a “time map” of the world based on the B-series.³³ Similar thought patterns became evident in a study of attitudes toward a planned nuclear waste repository in

²⁹ Benford, *Deep Time*, 17.

³⁰ Benford, *Deep Time*, part 2.

³¹ Stephen C. Hora, Detlof von Winterfeldt, and Kathleen M. Trauth, *Expert Judgment on Inadvertent Human Intrusion into the Waste Isolation Pilot Plant* (SAND90-3063) (Albuquerque, NM: Sandia National Laboratories, 1991); Kathleen M. Trauth, Stephen C. Hora, and Robert V. Guzowsti, *Expert Judgment on Markers to Deter Inadvertent Human Intrusion into the Waste Isolation Pilot Plant* (Sandia Report SAND92-1382) (Albuquerque, NM: Sandia National Laboratories, 1993); Benford, *Deep Time*, part 1; John Hart, *Permanent Markers Implementation Plan* (DOE/WIPP 04-3302) (Carlsbad, NM: Waste Isolation Pilot Plant, 2004).

³² Alfred Gell, *The Anthropology of Time: Cultural Constructions of Temporal Maps and Images* (Oxford: Berg, 1992), 151; Nathan L. Oaklander, *The Ontology of Time* (Amherst, NY: Prometheus Books, 2004), ch. 1.

³³ Gell, *The Anthropology of Time*, 154.

Sweden. The human ecologists Per Johansson and Ebba Lisberg Jensen identified two different mindsets among their respondents: “societal time,” which they connected with instability, and “repository time,” alluding to the stability of bedrock.³⁴

Time as an hourglass

The previously mentioned study by Holtorf and Högberg contains a model of “how interpretations of the past are transformed into suppositions about the future.” They illustrate the model with an hourglass-shaped figure, based on the A-series. A “rolling now” floats between the past and the future. This needle eye of now moves along the axis of time that is central to the B-series. Many possible narratives of the past exist, some more reasonable than others. Among the reasonable pasts, we select a few narratives that form a preferred past. Correspondingly, there are many possible visions of the future, some more reasonable than others. The narrative of the past we prefer today affects which vision of the future we prefer. Narratives of the past are not constant but change over time, which means that suppositions of the future also change as time passes.³⁵

This model emphasizes the connection between perceptions of past and future evident in the research on temporal depth, which is a strength. However, the figure is wrong in equating the size of possible pasts and possible futures. Events in the past have happened in reality and have left traces. At least to a certain degree, we can investigate the past empirically. The range of reasonable narratives of the past is certainly wide, but it is not unlimited. There are many more possible futures than possible pasts. As Bluedorn pointed out, historical consciousness affects the ability to imagine the future, but not the ability to make predictions.

To sum up, the concepts of temporal depth, deep time, A-series, and B-series are useful tools for an analysis of conceptions of time among archivists. In the following empirical study, they provide a rough structure for the interviews and the presentation of the findings.

Method

The present study treats archivists as a thought collective, an approach that makes a phenomenographic method relevant. The founder of the method, Ference Marton, actually used conceptions of time as an example of a phenomenon suitable for a study.³⁶ A phenomenographic study does not seek to answer questions about the nature of reality (the first-order perspective), but about what people think about reality, or a certain aspect of it (the second-order perspective).³⁷ Consequently, this is not a study of what time actually is, or about how communication with a far distant future might be accomplished. It is a study of how archivists think about matters like these.

³⁴ Per Johansson and Ebba Lisberg Jensen, *Identitet och trygghet i tid och rum: Kulturteoretiska perspektiv på kärnavfallsfrågans existentiella*, SKB Rapport R-06-119, November 2006, 32–33.

³⁵ Anders Högberg and Cornelius Holtorf, “Långtidsförvaring av kärnavfall: Från samtidsarkeologi till framtidsarkeologi,” *Primitive tider* 18 (2016): 289.

³⁶ Ference Marton, “Phenomenography—Describing Conceptions of the World around Us,” *Instructional Science* 10, no. 2 (1981): 188–91.

³⁷ *Ibid.*, 177–79.

According to Marton, phenomenography is “a research method for mapping the qualitatively different ways in which people experience, conceptualize, perceive, and understand various aspects of, and phenomena in, the world around them.”³⁸ Individual variations may of course be interesting, but the primary focus is on groups and how they conceptualize the world. Where Fleck states that a thought collective has its own thought style, Marton speaks of collective intellect: “This collective intellect can thus be seen as a structured pool of ideas, conceptions, and beliefs underlying the possible interpretations (or possible constructions) of reality.”³⁹

One might argue that discourse analysis would be a more suitable method for this kind of research. However, a discourse analysis studies a more or less explicit discourse on a subject, in society at large or among members of a profession. In the case of archivists and time, no such discourse exists, despite the importance of long-time perspectives for their work. The studied conceptions are largely implicit.

Phenomenography originates in educational research but is now more widely used. In information studies, Christine Bruce distinguished seven conceptions of information literacy among university teachers, librarians, and other higher education professionals.⁴⁰ A recent archival science study applied a phenomenographic method to explore how employees in a public agency perceived consequences of a far-reaching outsourcing policy.⁴¹

In a phenomenographic study, the empirical work aims to distinguish *categories of description*, that is, “the researcher’s interpretation of others’ experiences of the phenomenon.”⁴² Literature on phenomenography points out that a category is not the same as a conception, but a representation of a conception. In practice, however, this distinction makes little difference and the present study treats the two terms, category and conception, as synonyms.

A recommended procedure for processing interviews contains seven steps.

1. *Familiarization*: transcribe the interviews and read them carefully several times.
2. *Condensation*: select significant statements and roughly group together the ones that seem to relate to the same concepts.
3. *Comparison*: search for similarities and differences; try to see through superficial differences.
4. *Grouping*: put together the identified similar statements.
5. *Articulating*: try to describe the essence of each category and establish the boundaries between them.
6. *Labeling*: give the categories names that reflect their content.
7. *Contrasting*: in the final examination, compare the categories; some of the original categories may have to be merged, so that all categories are mutually exclusive.

³⁸ Ference Marton, “Phenomenography—a Research Approach to Investigating Different Understandings of Reality,” *Journal of Thought* 21, no. 3 (1986): 31.

³⁹ Marton, “Phenomenography—Describing Conceptions,” 198.

⁴⁰ Christine Bruce, *The Seven Faces of Information Literacy* (Adelaide: Auslib Press, 1997).

⁴¹ Ann-Sofie Klareld, “‘The Information Has Moved Away from Home’: Conceptions about How an Outsourcing Policy Affects Public Records Management,” *International Journal of Public Information Systems* 12, no. 1 (2016): 22–38.

⁴² Bruce, *Seven Faces*, 88.

The categories thus identified together form the *outcome space*: a “map” of the different ways in which members of the studied group experience the phenomenon.⁴³

In practice, the steps are not always as clear-cut as in the model. During the analysis, there is a constant interplay between the different steps.⁴⁴ The present study applied the recommended seven-step procedure, but steps 2 to 6 more or less melted together. The data collection method comprised semi-structured interviews with open-ended questions. The themes covered during the interviews concerned the relationship between archives and memory; long-term preservation and the sustainability of digital media; nuclear waste information and communication with a far distant future; societal continuity and discontinuity; manageable time distances; and the nature of time (see appendix). As is common in phenomenographic studies, the interview schedule primarily provided entrance questions, and the interviewees were allowed to talk quite freely about what came to their minds. The presentation of the results roughly follows the themes in the interview schedule.

The respondents, five men and five women, are all educated and experienced archivists. Their professional experience ranges from eleven to thirty-five years, with an average of twenty years, which means they have had plenty of opportunities to reflect on the matters at hand. Because of their extensive experience, they have seen the development of the profession in the last two or three decades. They are all familiar with traditional paper records, but four of them currently work primarily with digital preservation.

Respondents were selected using the author’s personal network. The goal was to find a selection of respondents from private as well as public archival institutions at the national, regional, and municipal level. Archival institutions represented are the National Archives’ central division and one of its regional branches, a county council archive, a city archive, a university archive, a social movement archive, and a private business archive. All institutions are located in Sweden. The interviews were conducted from January to May 2018 and lasted between thirty and forty-five minutes.

The conversations were recorded and transcribed, and the transcriptions were printed out.⁴⁵ Similar statements were marked with different colors on the hard copies. The statements were grouped into categories and then labeled with a summary sentence. Significant statements are quoted to further highlight the identified categories. The transcriptions were literal, but the wording of quotations are slightly edited and translated from Swedish to English. All respondents are anonymized and labeled respondent 1, respondent 2, and so forth, when quoted.

⁴³ Ibid., 87–88; Klareld, ““The Information Has Moved,”” 28–29; Lars Owe Dahlgren and Kristina Johansson, “Fenomenografi,” in *Handbok i kvalitativ*, 2nd ed., ed. Andreas Fejes and Robert Thornberg (Stockholm: Liber, 2015), 167–71; Lars Owe Dahlgren and Margareta Fallsberg, “Phenomenography as a Qualitative Approach in Social Pharmacy Research,” *Journal of Social and Administrative Pharmacy* 8, no. 4 (1991): 152.

⁴⁴ Dahlgren and Fallsberg, “Phenomenography,” 152.

⁴⁵ The recording of the interview with respondent 4 was interrupted by a technical error after six minutes, but the main features of the conversation were reconstructed via email an hour later.

Findings of the Interview Study

The following account of the interviews has a thematic outline, based on the most useful theoretical concepts identified in the literature review. Ten categories/conceptions are identified. Some of them are unanimous, a few are ambiguous, and others are clearly conflicting. As a thought collective, archivists share many ways of thinking, but their conceptions are not uniform.

Archives as memory

An initial question concerned how the respondents viewed the common statement that archives are the memory of society. Only one category/conception was identified here, and it was quite unambiguous.

Conception 1: Archives are the memory of society, although selective and incomplete.

The essence of this conception is that the description of archives as part of the memory of a society or an organization is accurate. The respondents use terms such as original memory, historical memory, or memory bank. They unanimously emphasize that archival records are remains from actual events and can present documentation of what actually happened. However, they also point out that archives never give the whole picture. The preserved memory is always selective; some respondents also talk about an arranged or curated memory.⁴⁶ Certain things are remembered because somebody has taken an active decision to preserve documentation about them. There are many other things going on that never enter the archives. Respondent 9 expressed this view very clearly:

Our representation of society, or what is going on in society, will never be complete. A selection is always made, either based on appraisal regulations or on archivists' subjective decisions, so we can never represent society's memory, or be society's memory, in a genuine way.

Deep time

There was broad agreement about the mission of the archival profession. The essence of this conception can be summarized as follows:

Conception 2: We preserve for eternity, whatever that means.

This conception has two parts. The first concerns how long archives should preserve records. Several of the respondents say that when they talk to non-archivists, they express a vision: "I say 'for eternity' without any limitation."⁴⁷ "We say: 'Until the Earth perishes.'"⁴⁸ They admit saying this a little jokingly, but they also insist that they really mean it; it is not just something they say. The second part of the conception is a reservation about what eternal preservation implies in reality. "There is a manageable eternity and an unmanageable one. An unmanageable 'eternal' eternity," respondent 1 said. Consequently, when the respondents use words like

⁴⁶ Respondents 2 and 10.

⁴⁷ Respondent 8.

⁴⁸ Respondent 2.

“eternity” and “forever,” they are aware that it does not mean “for all time,” but rather “for as long as possible.”⁴⁹ One respondent equated the work of archivists with a long chain:

I am a link in it, just like those before me were a link in what’s been preserved until today. [. . .] We should secure our link in the chain, in our perspective so to speak. As far as I’m concerned, I can then hand over something that is manageable to the next generation.⁵⁰

Speculation about the meaning of eternity was often connected to a discussion about the sustainability of different storage media. Some respondents pointed out that, if properly managed, paper records could last several hundred years, but that their lifetime is not unlimited. When asked about their views on the future of digital records, they expressed an optimistic but not unreserved view.

Conception 3: Digital records are basically just as reliable as paper records, although more vulnerable to societal discontinuities.

Optimism about the digital future was most clearly expressed by archivists working with digital records. One of them said: “I think e-archives will be just as reliable as paper archives.”⁵¹ Another IT archivist added: “I think that issue will certainly be solved. There is so much information in the world that needs to be preserved, which means there is a large number of people who can help maintain the information.”⁵²

Archivists working with traditional records were also basically positive toward digital preservation, but expressed more doubts:

I do not feel completely safe. [. . .] What I’m afraid of is not that key documents at the high political or administrative level will be lost, but all the other stuff. [. . .] There will be an even greater imbalance in what we know in a hundred years, just because the technology is still relatively new and it’s so easy to lose it.⁵³

Both traditional and digital archivists emphasized the fact that digital information is vulnerable and needs constant maintenance. They also agreed that the future of e-archiving depends on financial resources. Somebody has to pay, and the future of public archival institutions is uncertain in the long run. Today these institutions exist in a national framework, but modern nation-states are young from a historical perspective. The respondents expressed hopes that the nation-state will survive, but also doubts. Contemporary developments point in different directions. There is a trend toward larger units such as the European Union, but also disintegration of existing states. In a longer perspective, there are other and more serious misgivings.

⁴⁹ Respondents 1, 5, and 7.

⁵⁰ Respondent 10.

⁵¹ Respondent 2.

⁵² Respondent 10.

⁵³ Respondent 1.

Conception 4: Whether human society will experience continuity or discontinuity in the long run is impossible to predict.

This category summarizes the essence of a broad discussion on whether the future will bring societal, cultural, and political continuity or discontinuity. The answers contain two main lines of thinking. Some respondents are convinced that, sooner or later, nuclear war or pandemics will cause some kind of interruption. Just like civilizations in the past, modern civilization will vanish and humankind will have to start all over again. One respondent expressed it like this:

But the question is whether we can abstain from using nuclear weapons. [. . .] I believe that weapons are made for use. And it seems unlikely that they will not be used for ten thousand years. If so, you have to be prepared to start over from the beginning.⁵⁴

Others believe, or hope, that continuity will prevail. Respondent 4 was quite certain: “I don’t think there will be an interruption and that humanity will have to start over. Old knowledge remains.” However, most respondents were ambivalent and expressed both attitudes:

I notice that I spontaneously thought in terms not of gradual change but some kind of break. But when I critically review that idea, I think we bring with us a kind of disaster movie scenario. It’s a little like Mad Max, and it’s a bit. . . So, if we’re lucky and we have a good ability not to let everything go to hell, you can imagine a continuous development, where knowledge is passed on.⁵⁵

The uncertainty about the future of modern civilization is reflected in the respondents’ thoughts about methods to preserve and pass on nuclear waste information. This discussion also follows two main lines of thinking. If an interruption of civilization is likely, then there is a need for warning symbols and monuments. Several respondents mention Stone Age cave paintings, but then immediately hesitate and point out that images are difficult to interpret and that the meaning of symbols can change over time. The other position is skepticism about the idea of warning monuments. If there is continuity in society, the best solution is to trust the archivists and let them do their job: preserve the documentation with the best available methods and keep it updated. “I choose to think that all generations will do the best they can. [. . .] Do it in a way that makes it as easy as possible to understand and manage it with all that it takes, one generation at a time, because it’s so hard to know, regarding how fast technical development is.”⁵⁶ The two lines of thinking are often mixed in the same statements. Consequently, the essence of this category is one of ambivalence.

Conception 5: Nuclear waste information should be based on monuments and images, or continuous archival management, or perhaps a combination.

Temporal depth

Large parts of the interviews dealt with manageable time distances and planning horizons at work and in relation to personal life. On these issues, the respondents were largely of the same

⁵⁴ Respondent 5.

⁵⁵ Respondent 1.

⁵⁶ Respondent 10.

opinion and expressed relatively few doubts. The essence of one dominant line of thinking can be summarized as follows:

Conception 6: Thanks to existing documentation, we know something about the past but we can't tell anything about the future.

The archivists repeatedly stressed the importance of records. Existing documentation makes it possible to have knowledge of the past, but when it comes to the future there are so many uncertain parameters that we cannot predict anything.⁵⁷ Thanks to different kinds of documentation, it is also possible to feel a connection to people far back in time. Some interviewees mentioned that Roman literature treats elements of human life that were the same then as they are now.⁵⁸ Others made comparisons with people they had “met” in records and found it relatively easy to identify with them. The preferred example was the nineteenth century but a few also mentioned the seventeenth and eighteenth centuries, if they were familiar with sources from those years. “It’s like people somehow rise from [the documents] and become real, in a way. Maybe it’s specific for archivists, that we can sort of walk through time,” respondent 7 said.

In contrast to this pronounced sense of history, the respondents pay the future considerably less attention. They say that they do not make plans long in advance, neither in working life nor in private life. Respondent 4 “hates to plan far in advance,” and the future plans of respondent 1 stretch “until the weekend.” The last statement was made with laughter, but in general, the respondents’ active planning does not extend further than a few years. Of course, this does not mean that they are uninterested in the future, but what they regard as a manageable distance of time forward is surprisingly short.

A conspicuous feature of the respondents’ future thinking was its connection to immediate family, especially children and grandchildren. Those who did not have children of their own mentioned other family members as a frame of reference.

Conception 7: A manageable time distance is shorter in the future than in the past, and my thoughts about the future are mainly connected to my family.

Respondent 2 focused on the lives of the children: “You have those milestones: the children start school, the children finish school and then they move away from home, and then I don’t think you have a perspective anymore as a parent.” Respondent 5 set a limit at grandchildren: “Those I can relate to are my children and possibly the grandchildren I expect to meet. For my part, I don’t think much longer than that.” A few respondents also suggested that it might be possible to relate to great grandchildren.⁵⁹ The forward temporal depth of the respondents is longer in the archival profession than in private life. As mentioned before, the respondents have a vision of preserving for eternity (conception 2). In practice, however, the vision does not take very concrete shape, except when connected to a discussion about the sustainability of different

⁵⁷ Respondents 1, 3, 5, and 8.

⁵⁸ Respondents 8 and 10.

⁵⁹ Respondents 3 and 10.

preservation media. A possible explanation for this vagueness is the widespread uncertainty as to the future of human society (conception 4).

The nature of time

The concluding part of the interviews began with a short explanation, without using the terms A-series and B-series, of the two different ways to perceive time: as a stream (time moves) or as a scale (we move along the scale). The respondents had no trouble understanding the images, although they also pointed out that the two models do not have to be mutually exclusive. On this matter, the archivists did not appear to be a uniform thought collective at all. Three conceptions were clearly discerned.

Conception 8: Time is a stream.

Respondent 4 articulated this conception very clearly: “Time is a stream more than a scale for me. Things come, things happen. The idea of time as a scale does not feel natural to me.”

Conception 9: Time is a scale.

A statement by respondent 7 highlights this conception:

Linear time feels most natural, I have to say. I have studied archeology as well; I do not know if that’s got to do with it. You can see the development in burial customs. . . Also in archives, you can see linear time, I think—the modern society in which we live, with the clock and the calendar.

Conception 10: Time is both a stream and a scale.

This more ambiguous attitude became obvious in a statement by respondent 10:

If you do genealogical research, it’s definitely the scale you see and not the stream. And since I’m interested in history, maybe I’m a little inclined to see the scale. But then you have Midsummer, children in kindergarten, school exams, and then it’s easier to see the stream.

Although the present study is not a quantitative one, figures are sometimes interesting. Two respondents regarded time primarily as a stream, four of them saw it as a scale, and four as a combination. Those who preferred time as a scale connected this perception with a personal interest in history, which is hardly surprising. Given the close link between archives and history, it is more remarkable that two of the interviewed archivists actually preferred the A-theory of time. For them, this seems to be a matter of personal disposition rather than something connected to the profession.

Concluding Remarks

This study investigated conceptions among archivists about big but important issues like the nature of time, the function of archives, the implications of long-term information, the future of

digital media, and manageable time distances and planning horizons. The concepts of deep time and temporal depth proved to be useful tools for formulating questions and framing the answers.

In phenomenographic terms, the result of the investigation consisted of an outcome space with ten categories/conceptions. In several respects, the interviewed archivists appeared to be a cohesive thought collective with a common thought style. There was agreement on the role of archives as a selective societal memory and the vision of preservation for eternity. There was also fairly widespread optimism about long-term digital preservation. On other issues, the conceptions differed more. The lack of guarantees for long-term continuity in society caused uncertainty, not least in the case of preservation of nuclear waste information. This uncertainty also contradicted the vision of preserving for eternity. Concerning the nature of time, several respondents showed a preference for the image of time as a scale. However, this is probably not a specific “archival” approach, but more linked to people with an interest in history in general. Further research might elucidate this connection.

The matter of temporal depth was an area where archivists could be expected to differ more from other people. This assumption turned out to be true, but only in the case of temporal depth backward in time, and only when connected to records or other kinds of documentation. Archivists do not seem to have a longer temporal depth forward than people in general, and not longer than other heritage professionals. This conclusion is both a little surprising and worrying. What is particular to archivists is their tendency to connect their discussions about memory and preservation to records, both the specific types of records they handle at their archival institution and documentation more generally. When they think about the future, they also connect it to the kind of information that will be retained.

This study has touched briefly on a very complex matter, and more research about all its components is needed. The findings suggest that archivists do not have a better capability than others to foresee the future. What they do have is a strong sense of responsibility for the records in their care. They are committed to preserving information with the best available methods and to passing it on to the future. The image of generations of archivists as links in a long chain expresses this line of reasoning well.

Appendix: Interview Questions

How do you regard the memory metaphor, like for instance when archival institutions call themselves the memory of society?

What does long-term preservation mean in an archival context?

How do you think about the long-term sustainability of digital media?

What are your thoughts about the future of national institutions and modern society in general?

What are your thoughts about preservation of information concerning nuclear waste?

How can we communicate over long periods of time when we do not know much about those who will receive the message?

How far back in time do you feel a connection to people?

How long forward in time is it possible to feel a connection to people and make plans?

What is time for you—a stream (time moves) or a scale (we move along the scale)?

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