Introduction

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The past 15 years have witnessed enormous growth in research addressing all aspects of archives and archivistics in society. This research has evolved in multiple dimensions, including the impact on the record of changing technology and recording media; the shifting interface between archivists and other information professionals; and the development and impact of standards in areas such as metadata and preservation. While a corpus continues to develop that examines issues relating to traditional custodial and life cycle notions of archives and archival activities, there is much exciting work that is being done that addresses recordkeeping in all the complexities identified by the records continuum – including the socio-cultural roles of records creation, recordkeeping and records use.

From the perspective of sheer numbers, a new energy in archival education has led to more and larger programs around the globe engaging increasing numbers of academics and research students who in turn are producing more, and more diverse and innovative research output. In the field, archival practitioners have greater access to education and training in the conduct of research, and are becoming more empirical in how they approach their work. They are encouraged in this by a drive towards standardization and technological innovation, coupled with the need to address records created and preserved in new and emerging media that are not well understood, the complexities of the rights that are bound up with records, and social and political demands for the archives and the processes of archiving to become more transparent and accountable. All of these drivers necessitate more evaluation of programs and systems, more comparison across programs and repositories, more justification of resources invested, more understanding of the modes of records creation and control as well as the needs of ever-broader user populations, and closer delineation of the roles that records and archives play in real lives and communities. Looking outside the field of archival science, a

burgeoning corpus of relevant research literature is being generated by scholars in disciplines such as anthropology, sociology, political science, and science, as well as history, the field mutually and traditionally regarded by historians and archivists as ancillary to archival science. Scholars in these disciplines are debating the constructs of *the archive* and, more broadly, *the record* and *recordkeeping*. They are investigating the role that manifestations of these constructs have played in recent historical and political events and regimes, such as apartheid in South Africa and National Socialism and later Communism in Europe; as well as in contemporary professional occupations for which recordkeeping and accountability are integral components, such as nursing, police work and e-science.

Fundamental to this ferment is a challenging from within and without of the assertions, assumptions and even the vocabularies that have sustained the field of archival science for most of its modern life. Such challenges are not only theoretical, they also come from the need to deconstruct and to disambiguate that is an essential part of designing automated systems and tools, developing metadata schemas, delineating best practices, gathering benchmark data, and, quite simply, talking across community boundaries. As has been notably demonstrated through research projects such as InterPARES and CAMiLEON, this ferment has also brought with it rich new opportunities for interdisciplinarity through dialogue and debate across disciplines, as well as productive partnerships between theorizers and implementers, and academia and practice. We should also not neglect the international and trans-archival community dimensions that show up not only in research, but also in global standard setting activities where many research outcomes commence their transition into practical implementations. These have made the archival world a smaller, but infinitely richer place to do research and to contemplate the meaning of who we are, what we do, and how we contribute to wider social and intellectual frameworks.

The growth in research signals concomitant growth in the recognition and solidification of archival science within the academy and within society. However, any developing field of inquiry needs the rigor that comes from research infrastructure. That infrastructure has many components, including a paradigm, identifiable epistemological approaches accompanied by a suite of methodological tools developed, adopted or adapted to investigate its own questions, a solid footing within the academy, an accumulation of rigorously conducted research, and appropriate dissemination outlets. Despite all the

research activity that is ongoing, the research infrastructure within archival science today is still in a fledgling state, and there remains a need for archival researchers to become more reflexive and explicit about the design of their research in order to do the best possible research, and to educate archival audiences in how to conduct and read archival research.

For all of these reasons, it is timely now to take stock of how far we have come and to reinforce the development of a research mentality and a corpus of rigorous research. Our goals for this issue have been to evaluate and illustrate the state of the art in archival research, and at the same time, to demonstrate how essential research of all types is in our field. We also aim to provide a flavor of the quality, range, vigor, and excitement of current research.

The issue opens with an introductory article by Gilliland and McKemmish, "Building an Infrastructure for Archival Research", which reviews the landscape of what has been, what is, and what is needed in archival science research. It addresses the nature of the infrastructure required to support research in archival science and seeks to promote a more robust and diverse methodological framework for that research by identifying, describing and providing warrant for a wide range of methods and tools. This article also seeks to help readers to understand the epistemological lineage behind methods that are being borrowed from other fields and the ways in which these methods are being adapted for archival uses (e.g., recordkeeping ethnography and literary warrant analysis); as well as the evolution and maturation of methods that are uniquely archival, having developed out of archival theory and practice (such as functional analysis and contemporary archival diplomatics).

With this article as background, most of the rest of the issue is devoted to articles discussing specific research designs and applications of methods. Many of the articles are by authors who are relative newcomers to the field. They provide excellent examples of new types of research design and innovative applications of methods that are native or have been adapted to our field. They also provide a means of doing something that is a little unusual in research literature – lifting off the lid on the finished research to allow us to look underneath to the process and rationale that has guided it. We believe that this exposure is important because it demonstrates that research can be very hard to do well, and even when done well, can still be messy. As physicist and Nobel Laureate Richard Feynman observed in his 1966 Nobel lecture,

> We have a habit in writing articles published in scientific journals to make the work as finished as possible, to cover up all the tracks, to not worry about the blind alleys or describe how you had the wrong idea at first, and so on. So there isn't any place to publish, in a dignified manner, what you actually did in order to get to do the work.

Obviously, within the space of a single journal issue, it is impossible to do justice to the many methods, both new and more conventional that could be used in archival research. In making choices about what to include, we felt that methods such as survey research and historiography, that have a long history of use in archival research, have a less immediate need for extensive explication. We decided, instead, to focus on recent original research that adopts and adapts methods from other fields in innovative ways, or that applies emerging archival methods.

In "Contemporary Archival Diplomatics as a Method of Inquiry: Lessons Learned from Two Research Projects," MacNeil discusses the development of contemporary archival diplomatics, a research method that has its roots in diplomatics, one of the parent disciplines of archival science. The article explores the use of contemporary archival diplomatics to build conceptual frameworks for understanding reliability and authenticity in electronic records, and considers its possible future use in research designs employing multiple methods in interpretive frameworks. "Conceptual Analysis: A Method for Understanding Information as Evidence, and Evidence as Information," by Furner, offers a very different approach to analyzing evidence. The article demonstrates the use of propositional logic, deployed, in this case, to identify the precise nature of the relationship between conceptions of evidence and conceptions of information. Iacovino's "Multi-Method Interdisciplinary Research in Archival Science: The Case of Recordkeeping, Ethics and Law" discusses the use of methods drawn and adapted from the humanities, law and moral philosophy, as well as social science, e.g., discourse analysis and empirical instantiation, to explore the recordkeeping-ethics-law nexus from the perspective of communities as social systems, regulatory models for recordkeeping and their continuing application to online records. In the course of her work, Iacovino developed a new methodological tool in the form of a regulatory matrix that can be used for analyzing the ethical and legal rights and obligations of recordkeeping participants. The article demonstrates how complex archival research questions that cross disciplinary boundaries can be addressed by drawing on a number of research paradigms and conceptual understandings.

In "Investigating Information Culture: A Comparative Case Study Research Design and Methods," Oliver discusses the development of another complex research design that used conceptual models as instruments for analyzing and comparing case studies relating to the interactions of organizational culture, particularly national culture, with the management of information. Evans and Rouche, in their article, "Utilizing Systems Development Methods in Archival Systems Research: Building a Metadata Schema Registry," discuss how taking a systems development approach, including user-centered rapid prototyping, evaluation, and iterative design can lead to the closer delineation of theoretical archival concepts, and the interplay between theory and practice, and how such an approach differs from commercial systems engineering. Such research methods are likely to be of increasing interest to the archival profession in order to conceptualize and realize the tools necessary to support recordkeeping and archival processes in digital environments.

The final two articles, "Documenting Communities of Practice: Making the Case for Archival Ethnography," by Gracy, and "Recordkeeping in the Production of Scientific Knowledge: An Ethnographic Study," by Shankar, address the use of ethnographic techniques to examine archives and recordkeeping research questions in very different domains and for very different purposes. Gracy's work on understanding the systems of value that are at work in the world of film preservation, in both the profit and the not-for-profit sectors provides an example of *archival ethnography*; while Shankar, in her examination of the role played in an academic science laboratory, by records and recordkeeping in the production and dissemination of scientific knowledge, illustrates the use of ethnographic techniques to create an *ethnography of the record*. While each article makes a compelling case for using ethnographic techniques in archival research design, taken together the two articles, by exploring different applications of the techniques, show the interpretive range and power of an ethnographic approach.