Chapter 4

Archival and recordkeeping research
Past, present and future

Sue McKemmish and Anne Gilliland

The chapter provides an overview of research in the archival multiverse, reviewing and reflecting on historical developments, current trends and future directions. It chronicles the rapid diversification and expansion of archival and recordkeeping research over the past 25 years and the development of important research infrastructure. It presents philosophical and theoretical frameworks used in archival and recordkeeping research drawn from archival science and other fields, particularly those that support the exploration of records and recordkeeping as they exist in multiple cultural and social contexts. Methodologies and methods commonly used in archival and recordkeeping research as well as emergent approaches are discussed with reference to research design and case studies exemplifying their use. Archival research methods and techniques are identified and defined, including those derived and adapted from other disciplines, with a view to promoting their rigorous application, and providing sources for the teaching of research methods for professional and research careers. The chapter concludes with recommendations about how to sustain and extend archival and recordkeeping research to address the needs of our societies, organisations and communities.

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4 Parts of this chapter draw substantially on an article by the authors published in 2004: “Building an infrastructure for archival research” (Gilliland & McKemmish, 2004).
Introduction

This chapter provides an overview of contemporary archival and recordkeeping research\(^5\) in the archival multiverse. The archival multiverse:

   encompasses the pluralism of evidentiary texts,\(^6\) memory-keeping practices and institutions, bureaucratic and personal motivations, community perspectives and needs, and cultural and legal constructs with which archival professionals and academics must be prepared, through graduate education, to engage (PACG, 2011, p. 73).

Research plays an indispensable role in ensuring the growth, self-knowledge, and general wellbeing of any field. It builds theories and models that provide frameworks for practice and contextualise it. As well as developing the professional knowledge base and skills, research leads to a heightened understanding of the field’s ethos and societal roles and how these have evolved over time. It promotes critical enquiry and analysis, as well as reflection upon and evaluation of the theories, literature and practices of the field over time. Research helps to facilitate standardisation, planning and assessment by identifying and building benchmark data within and across research areas, institutional and community settings, and local and national jurisdictions. It also challenges and transforms existing paradigms, constructs and practices. It supports nuanced responsiveness to social, technological and intellectual developments. Overall, research supports more rigorous and sophisticated conceptualisation, articulation and assessment of the field’s central precepts and practices.

This chapter demonstrates how archival science is emerging as a meta-field that cuts across so-called ‘content disciplines’ and whose research analyses the \textit{processes and domains} associated with relevant professional activities (Bates, 1999). The meta-field is permeated by notions of the archival multiverse and its researchers increasingly question:

   whether archival ideas and practices developed over centuries in response to the needs and modalities of large and powerful bureaucracies and scholarly repositories are relevant or effective when applied in other cultural and organisational contexts, for example those that are grass roots, Indigenous, transnational, or emergent (PACG, 2011, p. 70);

and,

\(^5\) This paper uses the terms ‘archival’ and ‘recordkeeping’ throughout to include all aspects of archival science – as more traditionally understood through the life cycle model, as well as all aspects of the creation, management, use, and social embeddedness of records that are delineated in the records continuum model. The concept of ‘archival and recordkeeping research’ is similarly broadly construed and includes research on archival and recordkeeping topics being undertaken in ancillary fields.

\(^6\) We have used the term evidentiary texts here to be inclusive of records as they exist in multiple cultural contexts (i.e., the societal record), because the term records could be read as pertaining only to institutional/bureaucratic forms of recordkeeping (PACG, 2011, p. 73).
how ... we move from an archival universe dominated by one cultural paradigm to an Archival Multiverse; from a world constructed in terms of “the one” and “the other” to a world of multiple ways of knowing and practicing, of multiple narratives co-existing in one space (PACG, 2011, p. 73).

**Historical developments, current trends, future directions**

In this section, we review the archival and recordkeeping research landscape, pointing to historical developments and future directions. Within the past 25 years, the field has experienced unprecedented growth worldwide within the academy and the profession, spurred on by technological developments and social and intellectual movements. A more mature archival research consciousness has emerged in the academy and in practice with an unparalleled diversification of research themes. There has also been a significant expansion of the field’s research front, with an increasing number of large, collaborative research programs involving major international, national and local partnerships with archival institutions, the archival and recordkeeping profession, researchers from other disciplines, government, business and not-for-profit sector organisations, and communities. The building of new archival theories and models also indicates a growing maturity and scholarly awareness that the construct of the Archive\(^7\) provides a rich locus for research and theorising.

**Growing diversity of research themes**

Table 4.1 summarises three different characterisations of the landscape of archival research over the past 25 years. Couture and Ducharme (2005) analysed forty articles from five North American and international archival professional journals between 1988 and 1998. In a special issue of *Archival Science* on research methods, Gilliland and McKemmish (2004) reported on major and emergent areas of archival research since the Couture and Ducharme study, referencing not only professional journals but also new research journals, conference proceedings, and the growing number of research monographs. A rich picture of more recent thematic trends in archival scholarship emerges from a review undertaken for this chapter of the research reported by participants at the 2009–2011 annual meetings of the Archival Education and Research Institute (AERI, n.d.), a United States (US)-based forum which brings together archival researchers, educators and doctoral students from around the world.

\(^7\) The term ‘the Archive’ is used here to encompass broad philosophical and cultural notions of the archive in society and its societal functions, while ‘the archive’ refers to narrower professional constructions as they relate to records, the repository responsible for their management, and the practices and services associated with that management.
Table 4.1 Characterising the archival research landscape

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<td>▪ Digitisation and associated policy concerns, e.g., copyright</td>
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<td>▪ Sociology and politics of the record and</td>
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Emergent areas of research related to archival globalisation:

- Exploration of ways to diversify the archival paradigm and understand associated power and empowerment issues
- Assessment of the impact of global research and international standards emanating from research upon local archival traditions and theory, as well as marginalised communities
- Post-colonial issues: ‘The West vs. the Rest’
- Evaluation, comparison and potential reconciliation of conflicting conceptual models and descriptive schema
- Records law and policy, including reconciliation of different traditions
- Ontological, semantic, and ethnomethodological issues relating to developing understanding of emergent media forms
- Addressing terminological difference within the archival field and between it and other fields interested in some of the same issues.

### Couture & Ducharme (1998)

- Recordkeeping.

### AERI research presentations (2009–2012)

- Electronic recordkeeping systems and approaches
- Evidence studies
- Globalisation and other global concerns
- Health records and recordkeeping
- History of archives and archival practices
- Indigenous knowledge, culture and the Archive
- Legislative analysis
- Memory and identity studies
- Metadata modeling
- Moving image archives (analog and digital)
- Museum archives
- Personal recordkeeping and digital archives
- Scientific recordkeeping and data archives
- Social justice, human rights, truth and reconciliation commissions
- The social life of records and documents
- Transformative research by and with Indigenous and other communities partners
- Trusted digital repositories
Analysis of the trends in Table 4.1 illustrates the growing diversity of archival and recordkeeping research. Until the mid-1990s, much of the archival discourse focussed on the Archive as an institution that systematically promotes, preserves and makes accessible memory, culture and identity in the form of bureaucratic and social evidence. With reference to this construct of the Archive, much of the research reported from this period is fairly narrowly focussed on archival best practice, management and enabling technologies. The later studies report major shifts in the type of research being undertaken from the mid-1990s. We see both a move beyond the local, to span organisational, disciplinary, cultural and national boundaries, and a renewed focus on the local, including the impact that colonisation, whether it be political, cultural, theoretical, or practice-based, has upon different communities and constituencies. Emergent areas increasingly involve new types of participatory and partnership approaches in the areas of community and Indigenous archives and recordkeeping, as well as converging concerns with digital heritage and digital humanities communities.

The research trajectory reflected in Table 4.1 speaks to a maturing research culture that is responsive to the complexity and changing boundaries and ideas of the world in which archival and recordkeeping activities are situated. Innovative approaches range from social justice activism, humanistic contemplation, performance and aesthetics, and social scientific analysis, to ontological modelling and systems analysis and design. At the same time, the trend towards trans-disciplinary and trans-institutional collaborations tackling multiple facets of priority research problems, as explored in the next section, is strengthening. Acknowledgment of the complexity, inter-relatedness, scale and immediacy of problems confronting archives is also heightening awareness of the role of archival and recordkeeping in society. In response, the Archival Education and Research Institute is leading an initiative to develop an international archival research agenda which focusses on ways in which archival research can contribute to nationally and internationally identified societal ‘grand challenges’ such as climate change, sustainable communities, peace and security, social justice and social inclusion.

**Expanding research front**

Historically, most archival and recordkeeping research was individually or institutionally based. More recently there has been a major shift to collaborative research, situated locally, nationally trans-nationally, and even globally. There has been a more conscious bridging of academia and practice, and of basic and applied research, especially in the digital arena. Many collaborative partnerships have resulted in the publication of policies, standards and strategies which have set a benchmark for best practice.

A prominent illustration of the shift is the suite of ongoing University of British Columbia-led InterPARES Projects (International Research on Permanent Authentic Records in Electronic Systems, n.d.) that commenced in 1999. InterPARES has included multidisciplinary researchers from academia, archival
institutions, the industry and communities of practice in at least 14 different countries (Duranti & Preston, 2008). Another example is the European Electronic Resource Preservation and Access Network (ERPANET) (n.d.). It brings together museums, libraries and archives, the information, communications and technology (ICT) and software industries, research institutions, government organisations, entertainment and creative industries, and commercial sectors, including the pharmaceutical, petro-chemical, and financial sectors (Ross 2004). The Archivists’ Workbench Project (n.d.), a collaboration of researchers from the San Diego Supercomputer Center and mid-sized archival repositories, sought to scale down the Persistent Archives Technology developed for the US National Archives to meet the needs of repositories with quite different computing and financial resources, archival programs and priorities (Moore & Marciano, 2005).

The Archivists’ Workbench Project (n.d.) was a Monash University-based collaboration of academics in Australia and the US, the National Archives of Australia, the State Records Authority of New South Wales, the Descriptive Standards Committee of the Australian Society of Archivists, and an advisory group drawn from industry and international experts (Evans, McKemmish & Bhoday, 2005). The InterPARES 2 Project and Australian recordkeeping metadata research fed directly into the development of national, European and international recordkeeping metadata standards (Gilliland, Rouche, Evans & Lindberg, 2005). In Australia and New Zealand, archival institutions, including the Public Record Office Victoria, the National Archives of Australia and the National Archives of New Zealand have undertaken major research and development initiatives relating to digital repositories, e.g., the Victorian Electronic Records Strategy (PROV, 1999) initiative, and the development of digital recordkeeping strategies, standards and policies, e.g., the work undertaken by the Australasian Digital Recordkeeping Initiative (ADRI) in partnership with the International Council on Archives (ICA, 2008).

Moving beyond the early focus on electronic recordkeeping and institutional settings, groundbreaking partnership research in community settings is also attracting funding from granting bodies and philanthropic foundations. Examples include the Monash Trust and Technology Project (n.d.) addressing the archiving of oral memory and the relationship between Indigenous communities and government archives (McKemmish, Faulkhead & Russell, 2011); the Monash Country Lines Archive of animations of the story lines of Australian Indigenous communities (Bradley & Yanyuwa families, 2010); and community archives research at the University College London (Flinn, 2010).

Archival and recordkeeping researchers are also increasingly becoming involved in multidisciplinary collaborative research relating to the preservation of digital objects, the building of digital libraries, digital asset management, digital government, digital humanities, digital heritage work, and resource discovery. Such convergences support a growing awareness in other research communities of the relevance of archival perspectives and methods. Major collaborative research initiatives include the CURL Exemplars in Digital ARchiveS (CEDARS) Project (Day, 1999), the ADEPT Alexandria Digital Earth Prototype (Leazer,
Gilliland-Swateland & Borgman, 2000) and the SIP Smart Health Information Portals program (McKemmish, Manaszewicz, Burstein & Fisher, 2009).

**Archival theory and model building**

The greater diversity and the expanding research front reflect in part the impact of the so-called ‘archival turn’, first evident in postmodern and postcolonial discourses in disciplines like anthropology, literature and history. It has encouraged researchers in archival science to contemplate the societal implications and effects of archives and recordkeeping. Critical theory (discussed in Chapter 1: Research concepts) provides a framework for theorising about both the role of the Archive in social conditions and forces such as colonialism, oppression, marginalisation and abuse of human rights, and the part that it might play in postcolonial, post-trauma and post-conflict societies. Increasingly the Archive is being explored as a contested, political space, a societal concept associated with the promotion of asymmetrical power, grand narratives, nationalism, surveillance, and the omission, diminution or silencing of alternate narratives (Burton, 2005; Chakrabarty, 2000; Faulkhead, 2009; Ketelaar, 2002; McKemmish, Iacovino, Ketelaar, Castan & Russell, 2011; Portuondo, 2009; Stoler, 2009). Interdisciplinary areas such as race and ethnicity, gender and sexual orientation, and Indigenous and subaltern studies, are also addressing the role of the Archive (Cvetkovich, 2003; Rawson, 2009). At the same time, war crimes tribunals, truth commissions, and reparations and reconciliation efforts increasingly employ records and archives as key instruments in human rights and social justice efforts (Blanco-Rivera, 2009; Caswell, 2011; Harris, 2007; McKemmish, Iacovino, Ketelaar, Castan & Russell, 2011). A theoretical base for postcolonial archival studies and the decolonisation of the Archive is emerging situated in the larger discourses on postcolonialism and postcoloniality. Ethnic and critical race studies, transnational approaches and theories of the diaspora are informing the re-conceptualisation of the Archive in a trans-disciplinary, multicultural, pluralistic, and increasingly interconnected and globalised world (Campt, 2012; Dunbar, 2006; Kaplan, 2000; Hall, 2003; Ong, 1999; Wurl, 2005).

The archival literature has been replete for many decades with expository and discursive writings on the nature of archival theory and how it can or cannot be distinguished from praxis. However little critical attention has been paid until quite recently to how archival theory has been, or should be built. In the 1980s and 1990s, there was considerable intellectual ferment internationally in two areas: the historical articulation and adoption of archival principles such as respect des fonds and provenance (Carucci, 1992; Nesmith, 1993) and the manifold re-examinations of appraisal theory in response to Hans Booms’ reflections on archival appraisal with reference to communism, the rise of social history and the

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9 Pioneered by postcolonial scholars in South Asia, subaltern studies engage the perspectives of those outside the hegemonic power structures (social, political, economic, geographic).
proliferation of records created through new technologies (Booms, 1987; Menne-Haritz, 1994). More recently, researchers influenced by cultural theorists such as Appadurai, have applied participatory design ideas to conceptualising participatory appraisal and archiving (Huvila, 2008; Shilton and Srinivasan, 2007).

An international cadre of archival scholars, including Brothman (1999 & 2001), Cook (1997 & 2001b), Ketelaar (1999 & 2000), Harris (2001), Nesmith (1999 & 2002), and Upward (1996 & 1997) are engaged in re-thinking and debating the theories and models that informed archival practice for most of the twentieth century. Their postmodern, postcustodial writing has been influenced by philosophers such as Foucault and by Derridean archiviology, “a general science of the archive, of everything that can happen to the economy of memory and to its substrates, traces, documents …” (Derrida, 1995, p. 34). Their work represents a conscious archival theory-building movement. Upward’s records continuum theory and related models in particular offer a sophisticated and robust approach to building an archival ontology and epistemology that can be applied in multiple contexts (McKemmish, Reed & Upward, 2009).

Research programs and research infrastructure

This section discusses the development of archival research infrastructure over the past 25 years. That infrastructure has included archival research education, targeted research agendas and funding programs, scholarly venues for the discussion and dissemination of research, and an evolving research ethos and culture.

Research education

In some places in the world, such as the US and Europe, there has long been a tradition of practising archivists holding doctoral degrees, predominantly in history. From the early 1990s, partly in response to the need to grapple with the impact of new technologies, increasing numbers of students and professionals have pursued doctoral degrees through academic programs in archival science. These programs have expanded and diversified in response to increasing demand for professional qualifications, archival and recordkeeping research to support practice, and new career faculty members who can be state-of-the-art scholars as well as educators (Gilliland, McKemmish, Bin, White, Lu & Lau, 2008). Rising numbers of recent doctoral graduates have contributed to increasingly rigorous research being disseminated through a growing number of conferences and scholarly publications, as well as the growing diversity of research topics and methods. The crucial role played by domain experts/archival and recordkeeping professionals in institution-based research and development initiatives, as well as in collaborative research projects, highlights the important role of archival education programs. These programs prepare future professionals to conduct, evaluate, and read research that relates to their areas of professional activity, and equip them with knowledge about archival concepts, practices, policies and technologies (Gilliland-Swetland, 2000).
Targeted research agendas and funding programs

Availability of funding is critical to nurturing sustained and purposeful research. At national and international levels, scholars play an important role in working with government funding agencies and the professional community to identify priority research areas. In recent years, there have been unprecedented levels of external funding, especially from US, Canadian, UK, European and Australian government research bodies. As schemes have mainly targeted collaborative work, the willingness of archival institutions, records programs, private foundations, the profession and partner communities to sponsor and provide matching funding, in-kind resources and test beds has been critical to securing major grants. Initially, most funding flowed to collaborative research on the management and long-term preservation of electronic records in international, national and institutional settings. The pioneering 1991 report from the US National Historical Publications and Records Commission (NHPRC), Research Issues in Electronic Records, set the research agenda for NHPRC funding initiatives. They included the Pittsburgh and Indiana University projects (Bantin, 1998; Bearman, 1994), the US contribution to InterPARES and the Archivists’ Workbench. In Canada, the Social Sciences and Humanities Research Council supported University of British Columbia based projects, including InterPARES (with major sponsorship from national archival institutions and other professional associations, consortia, and smaller repositories worldwide). The Australian Research Council has funded major collaborative research on recordkeeping metadata with matching inputs from national and state archival institutions and professional associations. In the context of the growing convergence between the research interests of digital archives, digital libraries, digital preservation, and metadata development communities, the US National Science Foundation, and the UK’s Joint Information Systems Committee (JISC, 2006) have contributed substantial funds to research on the preservation of digital materials, digital/data curation and cyberinfrastructure (American Council of Learned Societies, 2006; National Science Board, 2005; and National Science and Technology Council, 2009). European initiatives like ERPANET and DRAMBORA (the Digital Repository Audit Method Based on Risk Assessment) have been funded through Digital Preservation Europe (DPE). Research in digital humanities (Bobley, 2008) and in not-for-profit and community settings has also been funded, e.g., by the Australian Research Council and philanthropic foundations. In part as an outcome of the 2005 UN Joint/Ohrentlicher Principles to combat impunity, and in part because of national, international and philanthropic interests, research funding is also gradually becoming available for archival research in post-conflict societies (Schweizerische Eidgenossenschaft Federal Department of Foreign Affairs, n.d.; Swiss Peace, n.d.; United States Institute of Peace, n.d.)

Scholarly venues

A research front cannot be sustained without robust ways for researchers to exchange ideas and research findings, work together to build research capacity and infrastructure, and nurture future generations of archival educators and
researchers. In past years archival academics and researchers have met in pre-conferences before the meetings of the major professional societies; and events sponsored by the Section on Archival Education and Training of the International Congress on Archives (ICA-SAE). More recently, summer schools for regional doctoral students have been held in Europe, for example, as part of Memornet in Finland (Memornet, n.d.). Since 2008, the US Institute of Museum and Library Services has funded the week-long annual Archival Education and Research Institutes bringing together faculty and doctoral students from the Americas, Australia, Europe, Asia and Africa. This development has highlighted the importance of dedicated venues to present and gain feedback on research, learn about innovative methodological approaches, strategise research priorities, and collaborate on building needed research infrastructure. Another telling development has been the rapid increase in the number of scholarly forums in which archival research can be published, including the relatively new international journal Archival Science, and the publication of archival research in journals and conference proceedings in other fields such as digital libraries, information science, education, and sociology.

**Evolving research ethos and culture**

As the field’s research ethos and culture evolve, important questions arise relating to professional and disciplinary values, and the principles, knowledge and skill sets that archival and recordkeeping researchers need to bring to their work. How can the field ensure that its research is rigorous, eligible and available for peer review, able to withstand scrutiny by the public and funding bodies, and compliant with professional, institutional, and funding body requirements for ethical conduct? How does the development of a more robust ethical framework for archival and recordkeeping research fit with the professional codes of ethics and value statements (Gilliland, 2011)? The trend toward collaborative, community-centric, trans-disciplinary and international research, and increasing concern about protecting vulnerable research populations bring new challenges, including exposure to Institutional Review Boards or community-based Ethics Committees. These processes typically require the submission of a detailed research protocol, data gathering instruments, draft informed consent letters, and statements about how the rights, privacy and non-coercion of individuals referred to in gathered data will be ensured during and after the project, as well as in any resulting publications and presentations. Researchers need to become familiar with ethical processes and practice, and the ethical philosophies and frameworks that underpin them.

The ethical conduct of research becomes even more complicated when working with multiple funding agencies, institutions and national jurisdictions, and in partnerships involving diverse cultural beliefs and world-views, and researchers from several disciplines. Complex issues of intellectual property, acknowledgement of the contributions of the various parties, rights of all participants in the research data and publications, and ownership of outcomes arise. Working with communities, especially vulnerable communities, requires
respectful negotiation of what constitutes ethical research behaviour in terms of the culture and values of all involved. Difficulties associated with often incommensurate infrastructures and resource bases need to be addressed. Negotiated partnership agreements need to address issues relating to the ownership of research data, other data rights, appropriate research protocols, the co-creation of knowledge, and the co-authorship of research outcomes, while guarding against the misappropriation of community knowledge through research processes that might be considered ethical in a traditional academic context (Lau, Gilliland & Anderson, 2012).

**Philosophical and theoretical frameworks for research**

The increasing emphasis on rigour in research design, combining multiple methodological approaches within a single project, and the explicit choice of methods and techniques that are likely to yield the most insightful outcomes, is evidence of a growing maturity in the archival research culture. It also reflects the impact of professional and doctoral education in research methods and design and the requirements of peer-reviewed research journals and conferences. This section explores the philosophical and theoretical frameworks in which archival and recordkeeping research is conducted, while the following section discusses commonly used methodologies, models, methods, and techniques.

**Positivism and interpretivism**

Chapter 1 discusses how until recently the dominant research paradigms in the social sciences have been positivism and interpretivism, and critiques how they have been constructed as binary opposites. It points to the association of particular research methodologies, methods and techniques with different paradigms, e.g., positivist researchers tend to favour quantitative and experiment-based research, while interpretivists are more likely to use qualitative methods. Increasingly research methodologies, methods and techniques are used across these paradigms, albeit applied and evaluated in different ways. They are also used in combination in mixed methods research.

The broader intellectual context of the differing approaches to research encompasses modern and postmodern philosophical, anthropological, sociological, and historiographical thinking, including explorations of the nature of theory itself. This is clearly illustrated in the different understandings and interpretations of the record and the archive that underpin archival and recordkeeping research. The interpretive paradigm encompasses a spectrum of approaches that are linked to constructivism, structuralism, critical theory and cultural studies, and has in recent years been strongly influenced by postmodernism, and increasingly also postcolonial ideas. Mortensen (1999) argued that: “when the positivist conception of science is abandoned, new forms of archival theory emerge” (p. 1), theory that is better understood as “reflections on or criticism of existing practices” (p. 20), displaying “sensitivity to context and history” (p. 21). Positivist researchers tend to espouse notions of the record and
the archive associated with ideas about the objective and fixed nature of records, and the impartial and neutral roles played by archivists in their preservation. By contrast, interpretivist researchers focus on the contingent nature of records, the diverse and changing contexts in which they are created, managed and used, and the formative role played by recordkeepers and archivists. Their views are influenced by anthropological thinking about records as cultures of documentation. They see the Archive, the processes that shape it, and the world views embedded in its systems of classification as manifesting the power configurations, memory and evidence paradigms of particular times and places (Stoler, 2002). Postmodern ideas about records view them as both fixed and mutable, “always in a process of becoming”, fixed in terms of content and structure, but linked to ever-broadening layers of contextual metadata that manages their meanings, and enables their accessibility and usability as they move through “spacetime” (McKemmish, 2005, p. 9). The Archive, conceptualised as by-product or residue, an historical artefact, fully formed and circumscribed in the positivist tradition, is seen as constantly evolving and changing shape, as a dynamic, performative entity in postmodern frameworks.

As also discussed in Chapter 1, ‘post’ ways of seeing challenge the dualism inherent in positivism versus interpretivism, the theoretical-inductive versus the empirical-deductive, and quantitative versus qualitative approaches. MacNeil (2004) has explored the way in which the creative tension between the two paradigms was manifest in the first and second stages of the InterPARES Project, speculating on how far the research moved beyond the paradigms in the triangulation of methods. The power of moving beyond such binary oppositions is suggested by Harris (2001, p. 42) when referring to the global and the local/Indigenous:

It is in the both/and, the holding of these apparent opposites in creative tension, that there is liberation. For instance, a liberation for the indigenous in being open to engagement with the dynamics of globalisation. A liberation for the global in respecting the indigenous.

In emergent archival and recordkeeping research, liberation may well lie in the challenge of applying the apparent opposites of interpretive and positivist approaches to studying archival phenomena. In part this may lead us to redefine, even refigure, the phenomena of interest to us. In part it may lead to understandings that some phenomena in our world behave in ways that are susceptible to being seen from a positivist perspective, while others are more readily understood from an interpretivist viewpoint. And perhaps the creative tension generated will lead us to yet other ways of seeing.

**Double hermeneutics**

Giddens coined the term ‘the double hermeneutic’ to refer to the “mutual interpretative interplay between social science and those whose activities compose its subject matter” (Giddens, 1984, p. xxxii), pointing to a blurring or even renegotiation of the boundaries between the observer and the observed.
Schauder (2002, p. 307) has characterised the ‘mind bending’ aspect of the double hermeneutic involved in research in the information meta-disciplines thus:

> It is yet another manifestation of the toughness of information management and systems research that what is studied – information phenomena – are in essence the same as how they are studied – the ‘tools’ used to study them. Both are constituted of processes of modelling.

Thus information researchers, in studying how people create a model or representation of knowledge, in turn create information models or knowledge representations that explain the models they are studying: “what information management and systems researchers are modelling is other people’s information modelling!” (Schauder 2002, p. 308).

While the construct of the Archive is itself an object of study, it provides the evidence for the study of other phenomena. Yet another manifestation of the double hermeneutic emerges in archival and recordkeeping research in community settings when definitions of community that rest on a shared identity and a sense of belonging to a collective are considered. Ketelaar has depicted every community as a community of memory wherein collective identity is linked to a community recognising itself:

> through its memory of a common past. … To be a community, family, a religious community, a profession involves an embeddedness in its past and, consequently, in the memory texts [in any form, written, oral, as well as physical] through which that past is mediated (Ketelaar, 2005b, p. 44).

**Research methodologies, design, methods and techniques**

In this section, methodologies, modes, methods and techniques commonly used in archival and recordkeeping research, as well as emergent approaches, are discussed with reference to research designs and case studies exemplifying their use. The discussion is supported by tables that name and articulate methods and techniques being used in archival and recordkeeping research, including those derived and adapted from other disciplines. The aim of this section is to promote their rigorous application, provide literary warrant for those wishing to use them, and serve as a reference source for the teaching of research methods for professional and research careers in archival science.

**Methodologies**

There is often confusion over the meaning and scope of research ‘methodologies’, ‘methods’ and ‘techniques’. Simply put, methodologies are the epistemological paradigms, the normative assumptions and ontologies which frame the researcher’s approach to ‘knowing’ and investigating their world.
There are two prevalent methodologies in the archival world. First, the set of ideas formulated about Archive Science since the Enlightenment and influenced by modern, scientific thinking and positivism: that archives are unconscious and therefore objective by-products of bureaucratic activity, that records follow a predictable lifecycle and that custody is integral to archival management. And second, the Records Continuum approach, influenced by postmodern thinking, and viewing recordkeeping as a continually interacting and evolving set of contingent activities with individual, institutional and societal aspects. The continuum approach allows for broad definitions of what is a record and for postcustodial, postcolonial notions of the Archive.

In response to societal challenges relating to social justice and inclusion, a new archival methodology is emerging. Influenced by postcolonial, post-conflict, and subaltern approaches, and the ‘archival turn’, it is concerned with ideas about decolonising and pluralising the Archive. It is closely associated with inclusive, participatory models of archival and recordkeeping practice and education (Lau et al, 2012; PACG, 2011) and community partnership research.

**Methods and techniques**

The growing diversity of methods used to examine complex and emergent phenomena within the archival multiverse can be grouped into three categories as presented in the tables below. They name and define methods and techniques, suggest possible applications, and provide examples of their application in archival and recordkeeping research.

Table 4.2 includes general research methods and techniques that might be considered at this point to be generic in the social sciences, computing and information sciences, and humanities.

Table 4.3 includes adapted research methods and techniques, borrowed from other fields but adapted and extended for use in recordkeeping and archival research.

The examples presented in Table 4.3 point to an increasing sophistication in adapting and extending, even transforming, methods and techniques from other fields over the past two decades. This can be seen in trends relating to the application of bibliometrics and ethnography, and the use of system modelling and design to prototype solutions to challenging recordkeeping problems, as well as the design of artefacts to investigate concepts and constructs, and provide proof of concept.

In addition to the methods described in Table 4.3, there are four particularly promising methods used in information technology, information systems and multimedia research that have as yet had little impact on the archival field. Design-science research focusses on developing innovative artefacts to solve a class or classes of problems. It is most often situated within a positivist paradigm, but also has potential to be used in interpretivist approaches when the focus widens to include the socio-technical and human contexts of systems (livari &
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<td>Action research</td>
<td>See Chapter 8: <em>Action Research: Theory and Practice</em>.</td>
<td>Particularly relevant to collaborative research and development projects involving university, institutional, community and professional partnerships where archival institutions, recordkeeping programs or communities are the locus of the research.</td>
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| Participatory action research | Based on “fundamental differences in our understanding of the nature of inquiry, not simply methodological niceties” (Reason & Bradbury, 2008, p. 4). “A participatory perspective asks us to be both situated and reflexive, to be explicit about the perspective from which knowledge is created, to see inquiry as a process of coming to know” (Reason & Bradbury 2001, p. 7). | Aims to solve practical problems (action), and generate new knowledge (research). Often makes use of case studies, ethnography and system analysis & design research methods and techniques. Participatory action research often employs second generation grounded theory approaches to data collection and analysis, as well as auto-ethnography, user-sensitive and value-sensitive design approaches. Examples include:  
  - InterPARES suite of projects (Duranti *et al.*, 2002; Duranti & Preston, 2008)  
  - Clever Recordkeeping Metadata project (Evans *et al.*, 2005)  
  - Monash Country Lines Archive (Bradley & Yanyuwa families, 2010). |
| Case studies                  | See Chapter 7: *Case study research in information systems*.                | In-depth studies of a single ‘case’ or comparative studies of multiple ‘cases’ that aim to generate rich pictures and insights that might be transferable to other cases. In ‘comparative archivistics’ (Ketelaar, 1997), case studies and ethnographies are used to explore differences in recordkeeping cultures and practice. Examples include:  
  - case studies of recordkeeping accountability (Cox & Wallace, 2002)  
  - archival custody and memory, a case study of the US Virgin Islands (Bastian, 2003)  
  - impact of recordkeeping and national cultures on recordkeeping in three educational institutions in different countries (Oliver, 2004). |
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| Constructivist grounded theory (also known as second generation grounded theory) | See Chapter 9: *Constructivist grounded theory: A 21st century research methodology.* | Used in exploratory research where little is known about a particular situation or phenomenon and new theory is developed or existing theories advanced. Used in participatory and community-based research projects to develop rich understandings of personal and community recordkeeping behaviours, recordkeeping and archival needs, conceptualising the Archive in community settings. Used to explore new phenomena and technologies, e.g., social media. Examples include:  
- early research on electronic records, e.g. University of Pittsburgh project on Functional Requirements for Electronic Recordkeeping (Bearman, 1994), the Indiana University Electronic Records Project (Bantin, 1998)  
- InterPARES2 case studies of electronic recordkeeping by individual artists (Duranti & Preston, 2008)  
- multiple narratives and views in archival appraisal (Bunn, 2011)  
- Indigenous archiving projects (McKemmish, Iacovino, Ketelaar, Castan, & Russell, 2011; MCLA, n.d.). |
| Content and discourse analysis | See Chapter 19: *Qualitative data analysis.* “A technique that treats concepts as classes of objects, events, properties, or relationships. The technique involves precisely defining the meaning of a given concept by identifying and specifying the conditions under which any entity or phenomenon is (or could be) classified” (Furner 2004, p. 233). | Analysis of professional and scholarly discourse to identify paradigm shifts and establish trends in theory and practice. Analysis of the development of policy and laws. Identification of counter- or submerged narratives. Analysis of constructs of the archive. Examples include:  
- history of archival ideas (Cook, 1997)  
- Derrida and the Archive (Brothman, 1999)  
- analysis of the concept of evidence (Furner, 2004) |
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| Historiography                   | See Chapter 12: *Historical Research.*                                      | Historical studies of archival science, recordkeeping and archival practice, archival institutions, the profession, development of national or regional archival traditions, key figures in the profession. Examples include:  
  - history of Australian recordkeeping (Piggott, 1998)  
  - Lester Cappon, the relationship of history, archives, and scholarship (Cox, 2004)  
  - role of archival practice in colonialism, imperialism, and religious movements (Burton, 2005; Portuondo, 2009)  
  - archival knowledge cultures in Europe, 1400-1900 (Head, 2010)  
  - Waldo Gifford Leland (Wosh, 2011). |
| Surveys, interviews              | See Chapter 6: *Survey designs,* and Chapter 16: *Questionnaires, Individual Interviews and Focus Group Interviews.* | Extensively used for data collection, in particular in action research, case studies, second generation grounded theory approaches, ethnography and systems analysis and design research (see examples in those sections). Examples include:  
  - user information seeking practices (Gilliland-Swetland, 2001)  
  - archival professional personality types (Craig, 2000; Pederson, 2002). |
### Table 4.3 Adapted research methods and techniques

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| Bibliometrics & sociometrics          | See Chapter 10: *Bibliometric Research*. Sociometrics is a quantitative method for studying social relationships, networks and patterns of interactions, and revealing hidden structures such as invisible colleges, subgroups, alliances, ideological agreement, and dominant individuals (Moreno, 1951). | Can be adapted for use in analysing recordkeeping practice, e.g., through an analysis of the occurrence of certain data elements in records, or consistency of linkages between data elements; discerning patterns of influence and interaction in institutional and professional collaborations; or revealing patterns of use. Useful in studies that reflect on the research trajectory of the field, e.g., citation analyses to explore trends and influences in the archival discourse; identification of patterns of collaboration between key researchers and the transmission of ideas; tracing the influence of particular academic programs, their faculty and graduates. Examples include:  
  - citation analyses to explore impact of computing on archival science (Gilliland-Swetland, 1992)  
  - metrics applied to user studies (Yakel, 2004)  
  - how archivists learn to appraise (Anderson, 2011). |
| Ethnography & ethnology               | See Chapter 13: *Ethnographic Research*. Ethnology involves cross-cultural and comparative study of the origin of human cultures, including social structure, language, religion and technology, and social change, often using multiple pre-existing ethnographies (Geertz, 1973; Monaghan & Just, 2000).       | In-depth, comparative and cross-cultural studies of recordkeeping and archiving practice in different national and cultural contexts. Studies of recordkeeping and archival communities of practice. Studies of role of national archival authorities in democratic societies. In-depth studies of archival practices such as reference services. Community-based fieldwork studies of archival and related issues in the socio-cultural realm of record creation, management, preservation and use. Studies of cultures of documentation, record and archive forms, formative recordkeeping and archiving processes, world views manifested in their classification, the power configurations they reflect, and associated memory and evidence paradigms. Examples include:  
  - recordkeeping and radiology (Yakel, 2001)  
  - records as infrastructure in science laboratories (Shankar, 2004)  
  - preservation practices (Gracy, 2004). |
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| Metadata modelling, mapping and instanciation        | Modelling and mapping metadata sets enabling precise definition and structuring, and graphical means of representation. Meta-mapping establishes equivalences and correspondences between metadata sets, as well as identifying gaps and inconsistencies. Metadata concept-mapping techniques identify major concepts and illustrate their inter-relationships. Instanciation systematically uses examples to populate models in order to test their validity, and highlight areas for further investigation and development (McKemmish, Acland, Ward & Reed, et al., 1999). | Use of formal modelling and mapping techniques in developing, structuring, testing and validating recordkeeping metadata sets and standards. Formal modelling of meta-maps to enable automatic translation between recordkeeping metadata sets, including those implemented in legacy systems. Used with systems analysis and design method. Examples include:  
- Australian SPIRT Recordkeeping Metadata Schema project (McKemmish et al., 1999)  
- Clever Recordkeeping Metadata and InterPARES MADRAS projects (see below). |
| Systems analysis, design and development             | Involves cycles of system conceptualising, user needs analysis, prototyping and reflective evaluation (Burstein, 2002). Can be used to investigate concepts and constructs, allowing exploration of the interface between theoretical concepts and their practical realisation (Evans & Rouche, 2004). Can be used to investigate needs and values through the design process. User and value sensitive design (VSD) emerged in the 1990s as approaches to ICT development that consciously and systematically takes into account human needs and values through the design process. VSD uses a tripartite, iterative approach integrating conceptual, empirical and technical investigations (McKemmish et al., 1999). | Extensively used and adapted to investigate the design of systems to support electronic recordkeeping and archiving, and digital archives. Used to develop a model system as a proof of concept or demonstrator of the feasibility of the approach or the underlying theory. Using a prototype as a research artefact to explore new concepts and constructs for digital archiving and participatory, online archives. Using formal activity, entity, relationship, role and data modelling techniques (e.g., IDEF, UML, ORM, DFD, RDF) in iterative, exploratory processes, enabling precise description and structuring of recording and archiving functions and processes. Examples include:  
- Victorian Electronic Records Strategy (PROV, 1999)  
- demonstrator of a metadata broker in a web service environment for the Clever Recordkeeping Metadata Project (Evans & Roche, 2004). |
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| 2009; Friedman, Kahn & Borning, 2006. | - MADRAS metadata schema registry in InterPARES2 (Gilliland et al., 2005)  
- development of preservation and business recordkeeping models in InterPARES2 (Duranti & Preston, 2008)  
- Koorie Archiving System specification in Trust and Technology project (McKemmish, Manaszewicz, Burstein & Fisher, 2011)  
- the development of digital recordkeeping strategies, standards and policies, e.g. the work undertaken by the Australasian Digital Recordkeeping Initiative (ADRI) in partnership with the International Council on Archives (ICA, 2008). |
Venable, 2009). Elicitation and codification of expert domain knowledge into a knowledge representation scheme or set of rules enables tasks or decision-making normally requiring human experts to be automatically implemented through an expert system (Giarratano & Rile, 2004). Potential applications include research on its applicability to automating or semi-automating online reference inquiries, applying archival description rules, creating metadata and making appraisal decisions. A recent pioneering example is the work of Srinivasan, Pepe & Rodriguez (2009) on eliciting cultural ontologies in archives. Information retrieval research employs mathematical and property-based models, and correctness measures (recall, precision, fall-out). Daniels and Yakel (2010) have done pioneering work in this field in relation to online finding aids. Virtual heritage modeling, involving three-dimensional (3D) animation and visualisation technologies, has enormous potential in archival research and practice. This is being demonstrated by a multidisciplinary collaboration between animators, anthropologists, Indigenous scholars and Indigenous communities in the Monash Country Lines Archive project (MCLA, n.d.). The project uses 3D animations, visualisations, and 3D representations to capture the dynamics of oral storytelling, intergenerational transmission of knowledge, and active learning. It points to how research might employ virtual heritage modeling and 3D animation to explore innovative use of multimedia and social media technologies in living online archives.

Table 4.4 includes archival and recordkeeping research methods and techniques that are unique to the archival field, having developed out of archival theory and practice.

The examples in Table 4.4 reflect the maturation and rich potential of archival research methods. Contemporary archival diplomatics has been extensively used in conceptual studies and researching electronic recordkeeping, and has also morphed into digital forensics. Adapted from professional practice, functional analysis has become embedded in research practice. Archival literary warrant analysis, pioneered by Duff (1998), has been extended and refined to support a wide range of research in recordkeeping, archival and other fields (McKemmish, Manaszewicz, Burstein & Fisher, 2009).

Reflexivity is another indicator of the growing maturation of the recordkeeping and archival field. As can be seen in the tables, the main methods used include bibliometrics and sociometrics, ethnography, and historiography. Perhaps acknowledging the set of double hermeneutics in play in archival and recordkeeping research, there is an increasing realisation of the importance of reflective research practice for individual researchers and research projects. This is particularly the case in interpretivist frameworks, inclusive research designs, second generation grounded theory, ethnographic studies, and participatory action research. A particularly useful set of reflective methods are associated with auto-ethnography (Anderson, 2006; Charmaz & Mitchell, 1997) Auto-ethnography is used in a variety of social science disciplines and features self-reflective narratives of the experience of researcher partners and participants as a
Table 4.4 Archival and recordkeeping research methods and techniques

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| Archival theory and model building | Systematic building and exposition of new theory, drawing on existing theories, concepts and models, observation, scholarly communication, data derived from other methods, and characterised by reflection, deep thought and a process of gestation of ideas.  
See Chapter 2: *Fundamentals of Research Planning*. | Reflection upon and augmentation of archival theory, and development of new theories and theoretical models, e.g., Records Continuum. Theorising about the nature and role of the Archive with reference to postmodern and postcolonial thinking, including exploration of the concept of decolonising the Archive. Developing conceptual and descriptive models of recordkeeping and archival activities and functions such as records creation, appraisal, description, preservation and access. Building conceptual models for describing records in their societal, business, and documentary contexts. Examples include:  
- appraisal theory (Cook, 1992)  
- archival hermeneutics (Brown, 1991–2).  
See also section on archival theory and model building earlier in chapter. |
| Diplomatics                       | Body of techniques, theories, and principles for analysing the form, function, and genesis of documents, with a particular view to establishing authenticity and reliability (Duranti, 1998).  
In contemporary archival diplomatics, they are applied to electronic and digital records. | Analysis of changes and continuity in document forms over time. Identification of record types in electronic systems. Identification of requirements for preserving reliable, authentic records in electronic and digital systems. Examples include:  
- identification of requirements for reliability and authenticity in electronic records in InterPARES 1 and 2 (Duranti, Eastwood & MacNeil, 2002; MacNeil, 2004; Duranti & Preston, 2008)  
- application of digital diplomatics to digital records forensics (Duranti, 2009). |
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<td>Functional analysis</td>
<td>Methods and techniques for recordkeeping functional, business analysis and work process analysis. Initially these techniques were developed for use in recordkeeping and archival practice, e.g., in system specification, appraisal and disposal, the development of business and archival classification schemes, the development of access policy.</td>
<td>Developing innovative policy and strategies, new standards and procedures. Identifying how records are created and used within recordkeeping systems. Understanding the societal and organisational mandates that govern recordkeeping. Examples include: ▪ research and development projects on functional appraisal and macro-appraisal (Cook 2001a &amp; 2004). Also used extensively in projects using systems analysis &amp; design and metadata modelling methods (see examples in relevant sections of table).</td>
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<td>Literary warrant analysis</td>
<td>The literary warrant for professional practice is made up of authoritative sources, which are recognised and valued by experts. Such authoritative sources may be found in the law, codes of ethics, standards, the professional and scholarly literature, oral and literary texts, and in domain experts. Analysis of the literary warrant for professional practice establishes the “mandates” for best practice, and identifies its conceptual and theoretical frames of reference (Duff, 1998).</td>
<td>Identification of social mandates for personal recordkeeping through analysis of sociology texts, and creative and reflective writings. Analysis of literary warrant to establish recordkeeping requirements. Analysis of standards, statements of best practice, and research reports to identify recordkeeping metadata requirements. Examples include: ▪ functional requirements for recordkeeping (Duff, 1998) ▪ evidence and law in recordkeeping (Iacovino, 2004) ▪ recordkeeping warrant for metadata schemas (Cumming, 2005; Evans et al., 2005) ▪ development of InterPARES 2 Literary Warrant Database (Gilliland et al., 2005) ▪ evidence of me (McKemmish, 2011).</td>
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The term “literary warrant” was first used in 1911 in an article by Wyndham Hulme (Hulme, 1911). Hulme used the term specifically to refer to the fact that the vocabulary of the Library of Congress Classification was empirically based on the warrant supplied by the Library’s collection rather than on the warrant supplied by other means such as classification theory and attempts to classify the whole body of knowledge, or by readers’ requests.
mechanism for exploring and analysing social phenomena. It can also be applied to reflect the experience of designing and implementing research, and working in collaborative research partnerships.

**Designing research**

Methods and techniques are the tools available to a researcher to carry out their investigation, observe and model the phenomena they are studying. They are creatively combined in research design. Designing research encompasses identification of the research problem, goals and desired outcomes; selecting the methodology with reference to the philosophical and theoretical approaches that frame the research; selecting and integrating appropriate methods; identifying the most effective techniques of data collection and analysis; and iteratively implementing, evaluating and adapting the research design as the research unfolds. It also involves rigorous negotiation and definition of research questions, mixing and matching research methods, triangulation of complementary methods to tease out multi-dimensional problems or questions, and meta-analysis of data collected through a variety of techniques, especially in large multidisciplinary, collaborative projects. Perusal of the examples in Tables 4.2–4.4 illustrates how the research design of initiatives like InterPARES, the Clever Recordkeeping Metadata project and the Trust and Technology Project mix, match and triangulate a range of methods and techniques. InterPARES is also an intriguing example of research undertaken across the positivist and interpretivist paradigms.

Many aspects of research design are classically established by the academic participants in research projects, even in research projects that are undertaken in collaborative partnerships in institutional and community settings. True partnership research, however, engages all participants, non-academic and academic, as partners and key stakeholders from research conception to dissemination. Inclusive design processes are employed within appropriate philosophical approaches and research paradigms. The methods and techniques most commonly used are those associated with participatory action research, second generation grounded theory (also known as constructivist grounded theory), user-centred and value-sensitive design approaches. Examples of this kind of research include the suite of Australian Indigenous community-based partnership projects which explore the archiving and recordkeeping needs of Indigenous Australian communities, and involve Indigenous and non-Indigenous researchers, Indigenous community partners, and the archival community in reconciling research (McKemmish, Faulkhead & Russell, 2011; MCLA, n.d.). The research design utilises user- and value-sensitive approaches to conceptualising, building and reflectively evaluating community archival systems, interfaces and functionalities. These approaches provide a principled way to identify, conceptualise and take into account the values, expectations and needs of community and academic partners, and other stakeholders and users. In-depth interviewing, focus groups, interpretative narratives and structured questionnaires are used to elicit needs and values. Data are analysed using
interpretative, qualitative and second generation grounded theory techniques. Relevant sources of literary warrant include the lore, law, protocols, codes of ethics, standards, best practice models, professional and scholarly literature, seminal research findings, and community Elders and domain experts.

Conclusion

This chapter has discussed past, present and future trends in archival and recordkeeping research, and the philosophies, paradigms and methodologies that frame it. It has explored the growing maturation of the field’s research ethos and culture, the evolving toolkit of research methods and techniques, and the field’s increasingly robust research infrastructure. What, then, will it take to sustain and extend this emerging research front? How will we ensure that archival and recordkeeping research addresses the needs of our societies, organisations and communities into the future?

We have tracked the emergence of an epistemological and research framework that is self-consciously archival in construction and application, although it is indebted to the epistemologies and methods of other fields, as well as their constructions of the Archive and the archival endeavour. We have also explored how archival methodologies link to broader intellectual, philosophical and theoretical trends, and related shifts in research paradigms. Continued development and maturation of the diversity of research methodologies, designs, methods and techniques in the field will enable examination of complex and emergent phenomena in the archival multiverse. Research on, and publication of, the literary warrant for archival and recordkeeping research methodologies, including methods and techniques, will facilitate deeper understandings of the epistemological lineage behind methods that are being borrowed from other fields. The ways in which these methods are being adapted for archival uses will also emerge, as well as the evolution and maturation of methods that are uniquely archival, having developed out of archival theory and practice. Being more reflexive and explicit about the development of archival and recordkeeping research agendas and the design of research will enable robust, rigorous and ethical research.

The chapter also points to an increasing awareness and shared understanding of the role and importance of archival research in other fields, and in archival and recordkeeping practice. There is a growing corpus of researchers who have a sound conceptual archival knowledge, are educated in the conduct of rigorous research, and recognise the potential for transformative research to occur in fertile trans-disciplinary research collaborations with institutional and community partners, both within and outside our own field. Nurturing and extending our research partnerships and channels for dissemination of research outcomes will enable us to engage with the recordkeeping and archival profession, institutions and communities, as well as other fields, in ways that are likely to result in ongoing intellectual excitement and research output. Inclusive, collaborative research agenda-setting and ongoing research infrastructure development is
critical at local, national and international levels if archival and recordkeeping research is to make a major contribution to the challenges our societies face locally and globally, and meet the short and long-term needs of the discipline and the profession. Reaching consensus on research priorities, working out how to articulate them persuasively to potential funding bodies and linking them to societal grand challenges will enable the field to have a greater influence on the priorities of funding agencies. It will also promote focused, in-depth research and consolidation of results in priority research areas.

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