

# Research in Archival Science: A Status Report<sup>1</sup>

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**RÉSUMÉ** Si l'archivistique est fort ancienne en tant que pratique, en tant que discipline elle constitue toutefois un phénomène contemporain. C'est ce qui explique, selon les auteurs de cet article, qu'il n'y ait eu au cours des dix dernières années pas plus qu'une quarantaine de textes en français et en anglais spécifiquement consacrés à la recherche en archivistique. Cet article effectue une synthèse de cette littérature afin, essentiellement, de répondre à la question de savoir comment l'on envisage aujourd'hui la recherche en archivistique. Précisant tout d'abord l'importance que possède celle-ci et son rôle dans le développement de la discipline, les auteurs en détaillent ensuite les objets en les répartissant à l'intérieur des neuf champs de recherche suivants : 1) Objet et finalité de l'archivistique; 2) Archives et société; 3) Histoire des archives et de l'archivistique; 4) Fonctions archivistiques; 5) Gestion des programmes et des services d'archives; 6) Technologies; 7) Supports et types d'archives: les archives électroniques; 8) Milieux d'archives; 9) Problèmes particuliers relatifs aux archives. Un volet portant sur la méthodologie, la formation et l'aide à la recherche vient compléter en fin de parcours cette typologie.

**ABSTRACT** Although the keeping of archives is a very ancient practice, their study as an academic discipline is a recent phenomenon. For this reason, in the view of the authors, there have been, in the last ten years, no more than forty articles in French or English specifically devoted to archival research. This article offers a synthesis of the literature, so as to answer the question: How is archival research envisaged today? Explaining first the importance of research in archival studies and the role it plays in the development of the discipline, the authors then proceed to examine its subject matter, dividing it into nine fields: 1) The object and aim of archival science; 2) Archives and society; 3) The history of archives and of archival science; 4) Archival functions; 5) The management of archival programs and services; 6) Technology; 7) Types of media and archives: electronic records; 8) Archival environments; and 9) Specific issues related to archives. The article concludes with a discussion of methodology, education, and support to research.

This article examines the state of research in archival science. To make our assessment we have reviewed the literature written on the subject over the last

1 This article was first published in the journal *Archives* 30, nos. 3-4 (1998-1999), pp. 11-38, under the title: "La recherche en archivistique: un état de la question."

ten years in both French and English. *On* is the operative word insofar as it defines clearly the scope of our article. The journal articles, conference texts, and monograph excerpts discussed in this article do not address the results of research. Rather, they are the authors' reflections *on* research, offering their views on the status of various fields of research in archival science. Our review of this literature enables us to examine the current state of research and offer an opinion on its future.

The article will demonstrate why research plays an essential role in the development of archival science; describe nine principal fields in research in archival science; discuss the dissemination of research; and examine methodology, training, and research assistance.

Our review of the literature allowed us to identify works discussing research in archival science. In spite of the limited number found, we excluded fourteen in the course of developing the structure of our paper. Of the thirty-eight texts used in this study, only six were written in French, all by authors in Québec.

## **The Importance of Research**

### *The Importance of Research in General*

The resources organizations allocate to research and development underline their importance. Robert Garon believes that senior management has "recognized that within the fields of human activity, progress is the result of the development of knowledge."<sup>2</sup> Research, however, is not an activity that calls only for money and intellect; it "requires a culture, an atmosphere, and an environment that promote its maximum growth."<sup>3</sup> In order to be effective, research must focus on a well-identified, accessible object of study.

Research needs human, material and financial resources, an adequate environment, an open-mindedness, even a culture. Its results must be recorded and transmitted, disseminated through various means such as learned journals, conferences and seminars, and university instruction. Without a network for dissemination of its results, research to advance knowledge would be conducted in vain.

We can agree fully with Garon that "the development of a nation, a social group, a corporation, or a field of study must be through research."<sup>4</sup> In addi-

2 Robert Garon, "L'importance de la recherche en archivistique," in Groupe interdisciplinaire de recherche en archivistique (GIRA), *La place de l'archivistique dans la gestion de l'information: perspectives de recherche, Symposium en archivistique*, Archives nationales du Québec à Montréal, 2-3 février 1990, p. 17.

3 Ibid.

4 Ibid., p. 18.

tion to developing knowledge in relation to a certain number of objects of study, research plays a fundamental role in the evolution of a discipline. Mary Sue Stephenson believes that research is one of the factors that allow a field or discipline to be identified as a separate profession.<sup>5</sup> Here lies the importance of research for the archival discipline.

***The Importance of Research in Archival Science and the Role of Research in the Development of the Archival Discipline***

Research in archival science is unique insofar as it takes place within a multidisciplinary environment encompassing records management, history, management, computer science, and library science. Garon wonders as a consequence if it is really necessary to conduct original research in archival science.<sup>6</sup> Should we not instead take research findings from other disciplines and simply apply them to ours? Before answering this question, we must determine if archival science has its own object, aim, and method. In other words, before conducting research in archival science, we must determine if it has attained the status of a distinct discipline which warrants that “society dedicate intellect to it.”<sup>7</sup>

Garon believes that archival science has an object that sets it apart from related disciplines: recorded information.<sup>8</sup> Archival science uses methods that are uniquely archival in nature (i.e., standards and rules, retention periods, document appraisal criteria). Archival science also has a unique aim: “the preservation and use of information that differ from the preservation and use for which the information was created in the first place.”<sup>9</sup> These arguments are not enough however to justify that research becomes a preoccupation of the archival discipline. Additionally, we must demonstrate the social usefulness of archival science and its autonomy vis-à-vis related disciplines. This issue, in fact, “is well worth a generation of research” according to Garon.<sup>10</sup>

Other authors believe that archival research is important because the discipline has recently entered an age of exploration.<sup>11</sup> David B. Gracy likens the opportunities for research in archival science to the uncharted waters into which Christopher Columbus sailed. Gracy believes this journey of explora-

5 Mary Sue Stephenson, “Deciding Not to Build the Wall: Research and the Archival Profession,” *Archivaria* 32 (Summer 1991), p. 145.

6 Garon, “L’importance de la recherche en archivistique,” p. 23.

7 Ibid.

8 Ibid., pp. 23–24.

9 Ibid., p. 26.

10 Ibid., p. 28.

11 Martine Cardin, “Explorations,” *Archivum* 39 (1994), pp. 526–29; David B. Gracy, “Columbus Revisited: The Status of Archival Research Around the World in 1992,” *Archivum* 39 (1994), pp. 520–25.

tion arises from four factors: first, the computer has given humanity a totally new means of creating, using, and preserving records; second, in integrating records management practices – especially in the management of semi-current records – archival science has developed skills in records handling and office management; third, archivists have embraced other activities such as public relations, that have in turn made them conscious of the role they play in society; and, fourth, the enormous use of new media presents new challenges in document preservation that only an archivist can address.<sup>12</sup>

Gracy elaborates his comparison of the researcher in archival science to Columbus – after a long journey at sea, he is liable to reach land he had not seen before. Like Columbus in the fifteenth century, does the archivist today know where research will lead? Gracy believes the answer lies in the way in which archivists themselves see their profession. “The status of study in our field, whether it is on the target or off base, healthy or anaemic, advanced or rudimentary, depends on what you think the nature of our field is and what it ought to be.”<sup>13</sup>

### *Characterizing Archival Research*

Demonstrating the importance of archival research remains a relatively easy exercise. The majority of authors consulted agree that research is essential to the development of the discipline. This agreement or consensus becomes fragile however when we attempt to characterize archival research, to define what it is and what should it be.

César Gutiérrez Muñoz believes that any archival research must take into account three elements: the research must be conducted within a framework and address a concrete object; the research must be undertaken with the objective of learning more about a subject and making the greatest use possible of the results; and, in light of its cost, research must be well-planned.<sup>14</sup> Practical research is very important in archival science: “Research in this area should include not only theory but also practical applications, since this is what makes archives a science and a legitimate occupation.”<sup>15</sup>

Mary Sue Stephenson agrees with Muñoz in emphasizing the practical aspects of research in archival science. She is however more concerned with the broader research environment than specific research projects.<sup>16</sup> Using library science as an example, Stephenson describes the divergent experiences

12 Gracy, “Columbus Revisited,” p. 520.

13 Ibid.

14 César Gutiérrez Muñoz, “The State of Research in Archival Science,” *Archivum* 39 (1994), pp. 530–31.

15 Ibid., p. 531.

16 Stephenson, “Deciding Not to Build the Wall,” pp. 146–47.

of researchers and practitioners that have led to the emergence of two distinct environments within the profession. This situation has a number of causes: some believe, for example, that library science lacks theoretical foundations; others that the practice of librarianship is narrow in focus.<sup>17</sup>

The state of affairs appears different in archival science, where despite a long history, its development as a scholarly discipline is more recent than library science and its theoretical corpus is more diversified.<sup>18</sup> Stephenson notes that archival science has yet to hit the “wall”; researchers and practitioners work together and in some cases the researcher and the practitioner are one. Practitioners have knowledge of and apply research results. Stephenson argues that archival science must avoid falling into the same trap as library science, and ensure that the distance between researchers (who must publish in order to satisfy the demands of the university environment) and practitioners (who must achieve concrete results in their work) does not grow unduly: “Research, if it is to be an integral part of practice, cannot be viewed as the personal responsibility of the individual archivist, somehow separate from the day-to-day world of archives.”<sup>19</sup> Barbara Craig agrees with Stephenson, especially in underlining that a link be forged between universities and the workplace: “Finally, beyond the legitimate claims for research to fill practical needs in the workplace, research and its related activities should build healthy connections between practitioners and scholars.”<sup>20</sup>

David Gracy believes that research in archival science must respect the following five conditions: it has to move beyond simple narratives and apply an appropriate methodology such as comparative, statistical, qualitative, or historical analysis; the archival nature of information must be a priority research field; it must be supported by the information sciences, especially when electronic documents are involved; it must be international; and systematic efforts must be made in order to find the necessary funds to finance the research.<sup>21</sup>

### Fields of Research in Archival Science

A number of the authors consulted proposed a research typology consisting of a more or less detailed list of possible research fields.<sup>22</sup> Munoz for example,

17 Ibid., p. 148.

18 Ibid., p. 149.

19 Ibid., p. 150.

20 Barbara Craig, “Serving the Truth: The Importance of Fostering Archives Research in Education Programmes, Including a Modest Proposal for Partnerships with the Workplace,” *Archivaria* 42 (Fall 1996), p. 109.

21 Gracy, “Columbus Revisited.”

22 Craig, “Serving the Truth”; Louise Gagnon-Arguin, “La recherche en archivistique,” in GIRA, *La place de l’archivistique dans la gestion de l’information*, pp. 259–74; Gracy, “Columbus Revisited”; Munoz, “The State of Research in Archival Science”; Ann E. Pederson, “Development of Research Programs,” *Archivum* 39 (1994), pp. 312–59.

has divided research topics into two broad categories, the first consisting of all research exploring principles, concepts, and techniques, the second entirely devoted to the history of the discipline.<sup>23</sup> Barbara Craig expands this somewhat limited view by dividing research in archival science into three main fields: archives and history; archives and technology; and archival case studies (among which appraisal occupies the first rank).<sup>24</sup> Other archivists<sup>25</sup> believe that fields of research must be better defined and demarcated: the aims and objectives of the science; the social role of the archivist; the position of the discipline among other fields of research; archival principles and concepts; the management of archives; archival functions, technologies, etc. In spite of this long list of possible fields of study, Gracy emphasizes the issue of electronic records, which can be examined from a traditional point of view (creation, use, retrieval, preservation, etc.) or from the perspective of information science. Gracy believes that “[p]robably the most visible and important research area in the traditional genre is records in electronic form,”<sup>26</sup> because it addresses – either explicitly or implicitly – all fields of research and it influences both the fundamental principles and the management techniques of the discipline.

Any review of archival science research typologies would be incomplete if it failed to mention the essential contribution of Ann Pederson’s study,<sup>27</sup> which divides research in archival science into six main spheres of study that are further subdivided into twenty-two distinct research fields. The six broad fields are: 1) the nature of information and of historical documentation; 2) the history of society and its institutions; 3) archives in society; 4) issues and relationships (including ethnics, information technologies, and other problems inherent to archives); 5) archival functions; and 6) the management of archival programs.

To establish a typology of research fields in archival science, we have had to develop a categorization so as to present the most representative summary of what has been written on the subject. Consequently, what follows closely resembles the typology used in the questionnaire sent to archival researchers in the scope of our current research.<sup>28</sup> The nine research fields are presented in Table 1 of the Appendix.

23 Munoz, “The State of Research in Archival Science,” p. 531.

24 Craig, “Serving the Truth.”

25 Gagnon-Arguin, “La recherche en archivistique”; Gracy “Columbus Revisited.”

26 Gracy, “Columbus Revisited,” p. 522.

27 Pederson, “Development of Research Programs,” pp. 336–39.

28 For more information consult the following Web site: <<http://mistral.ere.umontreal.ca/couturec/>>. Under the direction of Carol Couture, this project (1997–2000) received funding from the Social Sciences and Humanities Research Council of Canada (SSHRC). It is entitled “L’enseignement et la recherche en archivistique dans le monde. Une étude comparative.”

### *1. The Object and Aim of Archival Science*

The first research field combines the studies related to the object (information/document/records) and goal of archival science. It also includes research into the use of archives.

Louise Gagnon-Arguin<sup>29</sup> believes that the understanding of the aim of the archival discipline varies among archivists – some believe that the aim is to preserve memory, others believe it is to ensure access to information, while others believe it is to enhance administrative efficiency. There is no doubt however, as Gracy emphasizes, that this field is a critical area of research: “One of the most exciting traditional lines of inquiry lying before us is distillation of the core of archival enterprise.”<sup>30</sup> In fact, Gracy believes that the problems caused by the definition of the term *records* are closely linked to the essence of archival science itself and consequently, records constitute a subject that certainly deserves research. The same is true for the way in which archivists define the term *archives*. Gracy believes that *archives*, defined in the ICA’s *Dictionary of Archival Terminology* as being “non-current records,” fails to recognize the fact that archives are documents in current use, essential to organizations at the moment of use. The date of creation is merely a factual datum, one incapable of constituting the core of the definition of archives. These terminological issues lead Gracy to conclude that “[r]ecognizing facts as these, we cannot help but conclude that our researchers need to turn their probing minds to study and analyse our own conception of our field.”<sup>31</sup>

### *2. Archives and Society*

The second research field is concerned with archival science as a discipline and a profession. It includes studies on the role and place of the archivist in society.

Where archival science fits in contemporary society, what place it occupies, is a “fundamental question for the future of archival science.”<sup>32</sup> In fact, we need to define the place of archival science within human knowledge: is archival science really distinct from history? Is archival science a cultural discipline or a social science? Does not its records management function link it to organizational administration? Gagnon-Arguin believes that these unanswered questions demonstrate the relevance of this field of research within archival science.<sup>33</sup>

29 Gagnon-Arguin, “La recherche en archivistique,” p. 271.

30 Gracy, “Columbus Revisited,” p. 521.

31 *Ibid.*, p. 524.

32 Gagnon-Arguin, “La recherche en archivistique,” p. 271.

33 *Ibid.*, p. 272.

For his part, Gracy also concludes that the issue of characterizing the archival discipline with respect to other professions is very important. He notes that information specialists in numerous disciplines are beginning to participate in information policy-making, yet archivists do not seem to be involved in this activity. "A prime reason [for their non-participation] is the lack of knowledge of – that is, the lack of research into – the topic of information policy." Gracy concludes that it is important that archivists abandon their role of custodian and embrace the role of information specialist, one endowed with unique knowledge, vital to organizations.<sup>34</sup>

The demands of the labour market raise the issue of archival education, itself a field of research according to Gagnon-Arguin. We agree that the education of archivists is a promising avenue of investigation in archival science.<sup>35</sup>

### ***3. The History of Archives and of Archival Science***

This field of study includes research pertaining to the history of archival institutions as well as research focussed on the evolution of archival principles and foundations: the archival fonds, the principle of respect des fonds, the life cycle of documents, etc.

Archival principles and foundations (the principle of respect des fonds, the theory of the three ages of a record, etc.) represent a relevant object of research, one that can be studied from an historical perspective, and one that archivists, according to David Gracy, have ignored for far too long. He believes that "[w]e have neglected to use this traditional and staple field of research to seek a fundamental understanding of the development, place, and core of archival enterprise, which we could gain through historical comparative studies of record-keeping traditions."<sup>36</sup>

In a recent article, Barbara Craig agrees with Gracy, affirming that although they are sensitive to the past, archivists have virtually ignored their own history. Research in this field can lead to an increased understanding of creator organizations and consequently, a better understanding of the changes that affect the creation of the fonds itself.<sup>37</sup> In an earlier article in which she emphasized to an even greater extent the importance of this field of research, Craig stated that it was "perhaps the single most important factor positively shaping the future of the profession."<sup>38</sup> She goes on to explain why it is impor-

34 Gracy, "Columbus Revisited," p. 523.

35 Gagnon-Arguin, "La recherche en archivistique," p. 273.

36 Gracy, "Columbus Revisited," pp. 521–22.

37 Craig, "Serving the Truth," pp. 111–12.

38 Barbara Craig, "Archives Theory, Archival Practice, Archives History: Three Solitudes or a Trinity?," *Canadian Journal of Information and Library Science* 18, no. 4 (December 1993), p. 42.



tant that archivists reclaim this field of study: first, the history of archives can provide archivists perspective on their circumstances and problems, and on the future; second, a knowledge of the history of documents helps to understand what to keep and how to preserve it; third, the history of archives enhances our knowledge of and interest in the documents themselves, influencing positively the services we offer users; fourth, this field of research enables us to establish strong relationships between the practices of the past and those of the present, and demystifying those of the future; fifth, the history of archives stimulates critical thinking in our profession; and finally, this field of research will have a positive effect on the definition of archival principles and their application by archivists.<sup>39</sup>

#### ***4. Archival Functions***

This field of research represents the seven commonly recognized archival functions: records creation, appraisal, acquisition, arrangement, description, preservation, and accessibility. Only three functions have been the object of research for our purposes here: appraisal, preservation, and accessibility. Although we did not list articles concerned with every archival function, we would like to emphasize that this does not indicate that research is not available on all these functions.

##### *Appraisal*

Like Richard J. Cox and Helen W. Samuels,<sup>40</sup> Barbara Craig considers archival appraisal to be the archivist's first responsibility. Appraisal should therefore constitute a principal research field.<sup>41</sup> Although it has been the subject of numerous articles,<sup>42</sup> Craig regrets that there has not been sufficient research on archival appraisal from an historical perspective. She proposes that research in archival appraisal make greater use of case studies so as to revisit Schellenberg's concepts of the evidential value and informational value of records and, possibly, to develop new models of appraisal.

The article by Cox and Samuels was written at the behest of the Goals and Priorities Committee of the Society of American Archivists, whose aim is to

39 Ibid., pp. 43–46.

40 Richard J. Cox and Helen W. Samuels, "The Archivist's First Responsibility: A Research Agenda to Improve the Identification and Retention of Records of Enduring Value," *American Archivist* 51 (Winter-Spring 1988), pp. 28–51.

41 Craig, "Serving the Truth," p. 113.

42 A 1995 bibliographic study conducted by Ducharme and Couture lists 187 articles and monographs dedicated to the question of archival appraisal since 1980. See Daniel Ducharme and Carol Couture, "L'évaluation en archivistique, évolution et tendances. Étude bibliographique, 1980–1995," *Archives* 28, no. 1 (1996), pp. 59–98.

establish archival science research priorities, in this instance as they pertain to archival appraisal. The authors propose five main research priorities: 1) the nature of the documentary record; 2) the interrelatedness of archival records; 3) automated records; 4) automated descriptive systems; and 5) assessing the quality of the documentary record.<sup>43</sup>

We believe that these five research priorities can be reduced to three groups. The first and the fifth address the value of archives, their ability to offer evidence of the activities of a person or corporate body and to document a subject by offering relevant information about it. The third and the fourth priorities invite archivists to examine the appraisal problems raised by electronic records and to reflect on the links likely to be established between the automated description of archives and their appraisal. There is a wealth of potential avenues of research here. The last priority invites archivists to co-ordinate their actions to appraise more or less interrelated records created by similar corporate bodies (such as government institutions). Cox and Samuels indicate that documentation strategy – a concept they have developed – can be an important tool when undertaking research<sup>44</sup> which can integrate the appraisal function with the acquisition policies of archival repositories.

### *Preservation*

Closely related to his preoccupation with appraisal, Cox's 1990 article discusses research in the field of selecting documents for preservation. Cox regrets the monumental loss of information in archives as well as in the information field in general. He lists the factors responsible for the deterioration of documents: poor quality of paper; destruction of electronic records as they are removed from hard drives; and the fact that archival repositories and museums neglect or simply dispose of archival documents and artifacts because of financial constraints.<sup>45</sup>

Cox believes that although library science has made notable advances in preservation, the issue of appraising to preserve material is more complex in archival science. After explaining the contribution of archival science to the appraisal of documents for their preservation, Cox concludes that a documentation strategy is most appropriate. This approach is similar to the method employed in library science in that it adopts the principle that the informational value of a record is the most important consideration in appraisal.<sup>46</sup>

43 Cox and Samuels, "The Archivist's First Responsibility."

44 *Ibid.*, p. 40.

45 Richard J. Cox, "Contending with the Hydraheaded Monster: Preservation Selection or Enduring Information," in Richard J. Cox, ed., *American Archival Analysis: The Recent Development of the Archival Profession in the United States* (Metuchen, NJ, 1990), pp. 244–46.

46 *Ibid.*, p. 256.

Cox lists ten possible research fields when appraising for archival preservation:

1. Reevaluate the concepts of “comprehensive collecting” and “preservation” with an emphasis on the quality of information as opposed to the quantity of information;
2. Test the potential of recent library and archival appraisal models for preservation selection;
3. Refocus and redesign user studies to assess quality of use as a tool for preservation selection;
4. Evaluate and work to reconcile local and institutional needs with national preservation efforts so as to increase collective efforts to preserve documentary heritage;
5. Enhance automated systems to facilitate identification and analysis of information of enduring value;
6. Initiate more interaction with other information specialists and other types of repositories for planning and problem solving;
7. Co-operate in statewide assessments of documentation needs and priorities;
8. Assess the impact to date of reformatting programs on use and access to information;
9. Integrate preservation selection with collection management education; and
10. Design multidisciplinary graduate and mid-career training programs in documentation and preservation selection.<sup>47</sup>

### *Accessibility*

Two authors have addressed the “accessibility” function through use and user studies – both important fields of study. Lawrence Dowler suggests that the use of archives constitutes the foundation on which archival theory and practice should rest. “Research on the availability and use of records should be a primary goal of the archival profession.”<sup>48</sup> From this perspective, the goal of research is to systematically study the relationship between use of information and the way in which it can be provided to users. We can determine the value of archives and their informational value from this relationship, and consequently better guide archival theory and practice so that these may serve the needs of users.

<sup>47</sup> *Ibid.*, pp. 256–57.

<sup>48</sup> Lawrence Dowler, “The Role of Use in Defining Archival Practice and Principles: A Research Agenda for the Availability and Use of Records,” *American Archivist* 51 (Winter-Spring 1988), pp. 74–75.

Dowler proposes four areas in a research agenda: 1) the characteristics, investigative methods, and research subjects of users; 2) outreach services; 3) the mediation practiced by archivists between archives and users (this is close to library science insofar as it deals with the issue of reference services); and 4) on the assumption that users are more interested in the information than the medium used to convey it – or for that matter, the form in which it is presented – the final research field is concerned with the object of the research, an object that is not necessarily a search for “archives” but is always a search for information. “The reference archivists should be able to steer the researcher to those sources that may satisfy a question, regardless of the form of the material or its location.”<sup>49</sup>

Richard J. Cox also offers four avenues of exploration for research in archival science relating to reference: the first, like Dowler’s, investigates the user; the second groups together all studies concerned with research processes in archives, studies whose goal it is to improve access to documents; the third path attempts to measure the impact of technologies on research (for example, on-line research) in archival repositories; finally, the last path is concerned with the “reference” function in archival science.<sup>50</sup> Like Dowler, Cox examines the issue of archivist as mediator between users and the archival record. He concludes that research on the “accessibility” function – specifically research on the question of reference services – is gaining in importance in archival science research activities generally. In order to reflect this importance we must meet two conditions: we must work with other information sciences, and studies of users and their use of archives must examine all aspects of the issue of reference services.<sup>51</sup>

### ***5. The Management of Archival Programs and Services***

This research field encompasses all current issues relating to the management of archival programs and services: organizational theory and practice; program planning and evaluation; human resource management; accounting and finance; archival facilities management; and public relations. David Gracy believes that research in the management of archival programs should be front and centre in research in archival science, especially in light of the fact that working with electronic records profoundly alters the relationships between archivists and creators. All authors agree that government decision-makers underestimate archival science: “It is surprising that our concern has not

49 Ibid., pp. 82–85.

50 Richard J. Cox, “Researching Archival Reference as an Information Function: Observations on Needs and Opportunities,” *RQ: American Library Association, Reference and Adult Services Division* 31, no. 3 (Spring 1992), p. 370.

51 Ibid., p. 394.

developed into well designed research projects focused on such matters as public relations programs.<sup>52</sup> This implies that the field of public relations must be integrated to the research concerned with the management of archival programs and services.

In an article focussing on research on the management of archives, Paul H. McCarthy claims that the fundamental changes that have taken place in the political, technological, and cultural environments in which archives operate have led now more than ever to a requirement for increased management skills for archivists.<sup>53</sup> This need justifies the creation of a research agenda in this field. McCarthy further states that the management of archives is the responsibility of archivists and not professional managers: "If archivists cannot manage themselves and their archival institutions well, they will fall victim to those nonarchival managers who assert that they can do a more effective job."<sup>54</sup>

McCarthy defines a management skills model and lists four possible fields of study in the management of archives: the first includes all studies related to the corporate culture of the institutions where archivists operate or where archival fonds are created and archivists ensure their use. An enhanced knowledge of the organization's culture leads to an increased understanding of the development of the fonds as well as to the ability to compare fonds from subordinate institutions. The second research field consists of the systematic study of the organizational effectiveness of archival programs and services. Closely related to the second is the third field of research, which aims to develop an appropriate management of change to enhance management efficiency in archives; it also encourages the anticipation of future client needs by elaborating a theory of change and developing appropriate strategies. This field of research requires the archivist-manager to review archival functions from the management perspective of organizational effectiveness to ensure they respect the mission statement and mandate of the archives. Finally, the last field of research explores the various methods available to the professional archivist to pursue post-appointment education in management. As the author emphasizes, this final field of research is controversial: it assumes that archival education programs are inadequate and lacking a management component. The author does not believe that the current archival education programs require improvement; rather, we must develop shorter-length training courses that can fill this gap.<sup>55</sup>

52 Gracy, "Columbus Revisited," p. 523.

53 Paul H. McCarthy, "The Management of Archives: A Research Agenda," *American Archivist* 51 (Winter-Spring 1988), p. 52.

54 *Ibid.*, p. 59.

55 *Ibid.*, pp. 60-67.

## 6. *Technology*

The technology field of research focuses both on computer science as it applies to archives, and to information systems and telecommunications networks in general. We presented a detailed analysis on the subject of education and research in technology at the Association des archivistes du Québec's 1998 conference.

Research in technology in the archival context raises numerous issues that archivists must examine closely. David Gracy questions the traditional approach developed by archivists to address the problem of the ever-growing volume of documents. Does technology make obsolete the methods currently used by archivists? "[T]he computer gives the user the ability to search full text. Providing for full text search raises the question whether new finding aids are called for."<sup>56</sup> More than our methods, it may be that technology is threatening the archival character of recorded information – that is, it may annihilate the uniqueness of an archival document. Barbara Craig believes that the objective dimension of records is separate from their uniqueness and that our research should instead concentrate on the relationships between archives and technology in an historical perspective: "The very objective reality of records is a distinctive aspect of their character and should be one effective rudder for navigating archives safely in a fast flowing river of information."<sup>57</sup>

On the basis of their research, other authors have addressed the issue of technology as it pertains to archives. These writings however fit into the more general problem of electronic records. It is for this reason that we have chosen to instead group them in the next field of research discussed below.

## 7. *Types of Media and Archives: Electronic Records*

Although types of media and archives do not constitute a research field as such, the use of certain types of media can be a useful area of research, as in the case of electronic records. Many studies have been dedicated to the issue of electronic records.<sup>58</sup> This research field however is redundant. Each archival function has a media dimension: archival acquisition, appraisal, description, preservation, can all be done electronically. Electronic records – an archival medium – can be considered in a traditional perspective. Gracy states that: "The topic belongs in the traditional group, because our first goal has

56 Gracy, "Columbus Revisited," p. 522.

57 Craig, "Serving the Truth," pp. 112–13.

58 In a 1994 article, Carol Couture and James Turner inventoried more than 400 documents on the subject of the computerization of archives and electronic records. See Carol Couture and James Turner, "L'informatisation des archives et les archives informatiques," *Archives* 26, nos. 1–2 (1994), pp. 5–15.

been to determine how applicable our basic archival functions are to information in a form that does not adapt well to traditional methods of control.”<sup>59</sup>

Other authors have developed a different perspective on the question by concentrating on the nature of the electronic documents themselves, thereby facilitating the development of original avenues of research.<sup>60</sup>

Margaret Hedstrom employs the metaphor of electronic incunabula to illustrate the challenges posed by electronic documents. She believes that the transition from print to electronic communication changes the way organizations create and use information and profoundly disrupts social practices, much like the discovery of printing did five hundred years ago.<sup>61</sup> Consequently, research in the field of electronic records is different from research in other archival functions. Hedstrom proposes three characteristics unique to electronic records: 1) they are relatively recent and consequently an important number of archivists are not familiar with their nature or character; 2) electronic records involve complex multi-faceted problems, making involvement with other disciplines essential; and 3) because they affect all archival functions, electronic records are particularly challenging to the basic theory and practice of the archival discipline.<sup>62</sup>

Having identified the principal research objectives in the field of the management of electronic records, Hedstrom emphasizes that it is important that archivists understand the context for information technology: electronic records are born of specific needs and conditions and research can be influenced by the way in which we consider information technology. “Research on electronic records will be influenced by the researcher’s definition of information technology and assumptions about the role of technology in social and organizational change.”<sup>63</sup> This definition of technology can vary considerably from one individual to the next: is technology a simple tool, subject to socio-economic policies or is it a force driving socio-economic changes? Whether we focus on the social or technical aspects of technology, the fact remains that it holds an incredible potential for the processing of information. Research in this field must take into account the evolving nature of electronic records and their economic, social, and cultural dimensions.<sup>64</sup>

Hedstrom proposes five possible fields of study in electronic records. Presented in the form of questions, they are not mutually exclusive (see Table 2).

59 Gracy, “Columbus Revisited,” p. 522.

60 David Bearman, “Electronic Records Research Issues: A Decade of Refining Problem Statements,” *Archives and Museum Informatics* 11 (1997), pp. 205–11; Margaret Hedstrom, “Understanding Electronic Incunabula: A Framework for Research on Electronic Records,” *American Archivist* 54 (Summer 1991), pp. 334–54; Lisa B. Weber, “The Working Meeting on Research Issues in Electronic Records: A Report,” *Janus* (1992), pp. 16–24.

61 Hedstrom, “Understanding Electronic Incunabula,” p. 335.

62 *Ibid.*, p. 336.

63 *Ibid.*, p. 339.

64 *Ibid.*, p. 344.

The first field of research addresses the issue of the relationships among activities, organizational structures, information flows, decision-making, and documentation. It requires that researchers examine electronic documents within the overall organizational and documentary context.<sup>65</sup> The research studies the effects of technology on the documentation created by organizations.

The second research field looks at the new forms of materials users create with information technology. For example, is a digitized map still a map? This field encourages the study of new forms of documents as well as the migration of traditional types of documents to new media.

The third field of research examines the archivist's role in the design of information systems. Can these systems be better adapted to their organizational context? Can the archivist play a role in the design of these systems and if yes, at what point? Can an archivist ensure that these information technologies take archival needs into account?

The fourth field of research attempts to determine how electronic records will influence archival practices, specifically the storage and preservation of documents. Will electronic records affect the costs of preserving records and offering access to them? This field also examines the issues of the authenticity and integrity of archival documents.

The final field of research proposed by Hedstrom examines the fundamental problem of the impact of the management of electronic records on archival institutions and on the principles and foundations of the discipline. This field also aims to ensure that electronic records fully meet their requirement to provide evidence of organizational and societal activity.

Like Hedstrom, Richard J. Cox – in his doctoral dissertation completed at the University of Pittsburgh in 1992 and published in 1994 – proposes that the archivist develop a global approach to information technologies, one that considers their economic, social, and cultural aspects.<sup>66</sup> His fields of research, however, focus more on the preoccupations of the archival profession than those of Hedstrom (see Table 3). Of the six research fields Cox proposes, three are directly linked to professional concerns: the development of an appropriate program of education and training in the management of electronic records; the needs and expectations of employers regarding the archivist's work; and the attitudes of archivists towards technology, a field of study that

65 Ibid.

66 Richard J. Cox, "Archivists, Electronic Records, and the Modern Information Age: Re-examining Archival Institutions and Education in the United States, with Special Attention to State Archives and State Archivists; A Dissertation" (Ph.D. dissertation, University of Pittsburgh, 1992), p. 335; "Archivists, Archival Institutions and Electronic Records: Problems, Challenges, Opportunities and Needs for Additional Research," in Richard J. Cox, *The First Generation of Electronic Records Archivists in the United States* (Binghamton, NY, 1994), pp. 189–99.



could prove useful to the development of new strategies for education in electronic records management. The other three fields proposed by Cox are similar to those proposed by Hedstrom, while at the same time dealing with more concrete, practical issues. The first two examine the introduction of electronic records management systems while ensuring that archival needs are met; the last field, similar to one proposed by Hedstrom, concerns the study of the impact of computers on archival practice.

Given the increased importance of electronic records in the American archival context, the National Historical Publications and Records Commission (NHPRC) established a Working Group on the Management of Electronic Archival Information with the mandate to elaborate a program framework to encourage research in the field of electronic records management.<sup>67</sup> The Working Group organized several international meetings on the subject, where a consensus emerged: "The archival management of electronic records is probably the most important, and certainly the most complicated, issue currently before the archival profession."<sup>68</sup>

Building on this consensus, the NHPRC Working Group published a report summarizing the positions of participants.<sup>69</sup> It also outlines a national research program aimed at generating projects in the management of electronic records, grouping research around ten principal issues (see Table 4):

- i What functions and data are required to manage electronic records in accord with archival requirements? Do data requirements and functions vary for different types of automated applications?
- ii What are the technological, conceptual, and economic implications of capturing and retaining data, descriptive information, and contextual information in electronic form from a variety of applications?
- iii How can software-dependent data objects be retained for future use?
- iv How can data dictionaries, information resource directory systems, and other metadata systems be used to support electronic records management and archival requirements?
- v What archival requirements have been addressed in major systems development projects and why?
- vi What policies best address archival concerns for the identification, retention, preservation, and research use of electronic records?
- vii What functions and activities should be present in electronic records programs and how should they be evaluated?

67 National Historical Publications and Records Commission (NHPRC), "Research Issues in Electronic Records: Toward a National Agenda," *Bulletin of the American Society for Information Science* 18 (1991), pp. 19–20.

68 Weber, "Working Meeting on Research Issues in Electronic Records," p. 17.

69 NHPRC, "Research Issues in Electronic Records," p. 19.

- viii What incentives can contribute to creator and user support for electronic records management concerns?
- ix What barriers have prevented archivists from developing and implementing archival electronic records programs?
- x What do archivists need to know about electronic records?

It is evident that the research fields proposed by the NHPRC Working Group are similar to those proposed by Hedstrom and Cox. Questions one to four are concerned with the various elements of an information system and their relationships to archivists; question five examines the impact of such a system on archival science; questions six to nine address the problems arising from the introduction of an electronic records management system; and question ten examines the archivist's education. The report's most controversial aspect is not in its choice of research fields but in their order of importance. The Working Group believes that the first three are most important: the answers to these questions will define the archival requirements in electronic records management programs.<sup>70</sup>

In a more recent article, David Bearman and Jennifer Trant begin with the claim that the archival community – with the exception of Australia – is ill-prepared for the challenge of the management of electronic records.<sup>71</sup> In spite of the research undertaken in the last decade, which Bearman addresses in a separate article,<sup>72</sup> the authors state that the need for research to resolve the complex issues posed by electronic records has never been as pressing. Rather than the consensus found by the NHPRC Working Group, which serves as its point of departure for a possible research framework,<sup>73</sup> Bearman and Trant emphasize the internal divisions within the archival community. These dissensions are included in the six research fields they propose (see Table 5): the first refers to the most controversial issue in the community, the definition of the term *electronic record*; the second field focuses on an electronic records management policy, one that includes the costs related to the introduction of such a program in an organization; the third and fourth topics examine information technology, specifically as it relates to the creation of documents in a bureaucratic context as well as to the inter-dependency among hardware, software programs, metadata, and organizational structure. Bearman and Trant propose the long-term preservation aspects of electronic records as a fifth field of study (migration of data, obsolescence of equipment, etc.). Finally, the last

70 Weber, "Working Meeting on Research Issues in Electronic Records," p. 21.

71 David Bearman and Jennifer Trant, "Electronic Records Research Working Meeting, May 28–30, 1997: A Report from the Archives Community," *D-Lib Magazine* (July/August 1997), available at: < <http://www.dlib.org/dlib/july97/07bearman.html> >, p. 9.

72 Bearman, "Electronic Records Research Issues."

73 Weber, "Working Meeting on Research Issues in Electronic Records," p. 17.

area of research relates to the needs of users in the retrieval of recorded information in electronic media.

In spite of the minor differences in each approach, the main research fields in the management of electronic records proposed by the literature coincide with or at least complement each other. They can either be theoretical (Hedstrom) or practical (Cox); yet they all abandon the traditional perspective where all research in the management of electronic records is identical – or nearly identical – to the management of paper archival records.

### ***8. Archival Environments***

Not unlike types of media and archives, archival environments are research fields only if they are examined globally so as to establish, among other things, a typology; otherwise, the research is limited to an aspect or a dimension of a function. For example, the appraisal of archives in an educational institution addresses the “appraisal” function, even though it is conducted within a particular institution which can influence the way in which the appraisal is done. Regardless, the archival environment is an important research subject in and of itself. Louise Gagnon-Arguin considers that the changing circumstances in which we practice archival science constitute an engaging research subject, one which has generated numerous articles, particularly on the issue of “the impact of computerization – specifically, micro-computerization – on information and the new requirements it imposes.”<sup>74</sup> We believe however that this preoccupation is most frequently reflected in research related to technology and archives.

### ***9. Specific Issues Related to Archives***

As we have indicated, this article identifies the literature about research and not the research itself. We therefore cannot propose an exhaustive typology of all archival research subjects and it is for this reason that we include a research field entitled “specific issues related to archives.” These “specific issues,” which we might have labelled “other research,” includes studies in fields such as ethics, privacy, access to information, the environment, etc. We realize this is a convenient – and necessary – way of encompassing all potential fields of research.

### **Research Dissemination Network**

Paraphrasing Robert Garon,<sup>75</sup> without a network for diffusion, research cannot reach its ultimate objective: to advance both knowledge and the discipline

74 Gagnon-Arguin, “La recherche en archivistique,” p. 273.

75 Garon, “L’importance de la recherche en archivistique,” pp. 17–18.

from which it emanates. Different paths can be taken to communicate research results to the scholarly community: journal articles, monographs, research reports, and conference papers. For our purposes we believe that the publication of scholarly texts is the best method of diffusion; with the exception of one article on the subject of the influence of masters' dissertations on archival research,<sup>76</sup> all the authors indexed in our article examined the question of research in archival science either through the study of professional literature in general,<sup>77</sup> professional journals,<sup>78</sup> or monograph collections.<sup>79</sup>

Richard J. Cox, in fact, offers a concise history of the American archival literature since the turn of the twentieth century. He divides this history into three phases: an initial phase (1901–1936), followed by a period when the groundwork for an American archival literature was developed (1936–1972), and finally a period of maturation (1972–1986). He goes on to list three varieties of obstacle to the production of archival literature of quality: 1) theoretical (lack of consensus in the community on the existence of an archival theory); 2) professional (problems of archival identity and restricted audiences); and structural (weakness in research training, lack of availability of research grant programs). Cox concludes that archival literature is a critical means to communicate research results and is essential to the well-being of the profession.<sup>80</sup>

Five learned journals were the object of discussion in articles illustrating their importance to research: *Archivaria*,<sup>81</sup> the journal of the Association of Canadian Archivists; the *American Archivist*,<sup>82</sup> the journal of the Society of American Archivists; *Provenance*,<sup>83</sup> the journal of the Society of Georgia Archivists; *Janus*,<sup>84</sup> the information bulletin of the International Council on

76 Robin Wylie, "Student Archivalistics: The Contribution of Master of Archival Studies Theses to Archival Professional Literature," *Archivaria* 39 (Spring 1995), pp. 96–107.

77 Richard J. Cox, "American Archival Literature: Expanding Horizons and Continuing Needs, 1901–1987," *American Archivist* 50 (Summer 1987), pp. 306–23.

78 Jay Atherton, "The Contribution of *Archivaria* to the Development of the Canadian Archival Profession," *American Archivist* 57 (Spring 1994), pp. 270–77; Cox, "American Archival Literature"; Louise Gagnon-Arguin, "Les vingt ans de la revue *Archives*. Analyse des articles et des auteurs de 1969 à 1988," *Archives* 20, no. 1 (1988), pp. 3–28 and "La revue *Archives* depuis 1988. Étude de son évolution," *Archives* 25, no. 3 (1994), pp. 3–22; Margery N. Sly, "Provenance: Regional Journal as Training Ground," *American Archivist* 57 (Spring 1994), pp. 300–302; Cam Stewart Weber, "An Introduction to *Janus*," *American Archivist* 52 (Summer 1989), pp. 392–93; Joel Wurl, "Archival Issues: Past, Present and Future," *American Archivist* 57 (Spring 1994), pp. 304–308.

79 Lawrence J. McCrank, "Primary Sources & Original Works: A DocuSerial Concerning Archives, Documentation, and Scholarship," *American Archivist* 57 (Spring 1994), pp. 290–98.

80 Cox, "American Archival Literature," pp. 314–16.

81 Atherton, "Contribution of *Archivaria*."

82 Richard J. Cox, "An Analysis of Archival Research, 1970–92, and the Role and Function of the *American Archivist*," *American Archivist* 57 (Spring 1994), pp. 278–88.

83 Sly, "Provenance."

84 Weber, "An Introduction to *Janus*."

Archives; and *Archives*,<sup>85</sup> the journal of the Association des archivistes du Québec. The article by Lawrence J. McCrank on a collection of archival texts, “Primary Sources & Original Works”<sup>86</sup> completes our review of the literature disseminating research results. We would like to point out that three of the five journals originate in English North America.

The article by Wylie<sup>87</sup> describes the contribution to the archival professional literature of University of British Columbia Masters of Archival Studies theses. The author affirms that because a number of those dissertations were published as journal articles, they contributed to the dissemination of archival research.

## **Methodology, Training, and Research Assistance**

### ***Research Methodology in Archival Science***

A number of writers examine the issue of archival research methodologies in their articles. Only one however devotes an entire article to the subject, focusing on the teaching of research methods in the University of British Columbia’s archival science program.<sup>88</sup> Authors expressed regret, with respect to research methods, over the “lack of measurement tools, and uniform and significant statistics” that could facilitate the efficient evaluation of our work.<sup>89</sup> Gracy believes that numerous applications could emerge from studies conducted within the framework of this research field: “We should be able to find effective measures for it that would be applicable in many record-keeping traditions.”<sup>90</sup>

Barbara Craig writes that archival research must dedicate more time to methodology.<sup>91</sup> Although quantitative research methods are common, qualitative research methods should be added to the tools used by archival researchers to reflect the ever-growing influence of the social sciences on the issues raised by archives. Historical research methods will of course continue to occupy an important role in archival research methods.

Louise Gagnon-Arguin observes that among the possible approaches to archival research, the historical method “has always formed the basic archival education through its incontestable usefulness in the archivist’s work; archivists are most familiar with it, having used this method during their historical

85 Gagnon-Arguin, “Les vingt ans de la revue *Archives*” and “La revue *Archives* depuis 1988.”

86 McCrank, “Primary Sources and Original Works.”

87 Wylie, “Student Archivistics.”

88 Mary Sue Stephenson, “The Function and Content of Research Methods in Graduate Archival Studies Education,” *Archivaria* 32 (Summer 1993), pp. 190–202.

89 Gagnon-Arguin, “La recherche en archivistique,” p. 274.

90 Gracy, “Columbus Revisited,” p. 522.

91 Craig, “Serving the Truth,” p. 108.

studies.”<sup>92</sup> With the inclusion of records management within archival functions, we can also consider needs assessments or systems analysis as legitimate methods to meet the needs of the management of current and semi-current records. Needless to say, the methods developed in other disciplines can also inspire archival research. Whether emanating from the social sciences or management studies, these research methods can offer a relevant contribution to research in our field, as in the example of the qualitative methods emerging from the social sciences. In fact, a manual has been written on this subject.<sup>93</sup>

### ***Research Assistance***

Louise Gagnon-Arguin writes that “research is a complex intellectual activity comprised of multiple facets,”<sup>94</sup> one of which is the financing of research efforts. Not unlike other disciplines, archival science can rely on numerous financial sources to support research. Jean-Pierre Wallot’s article on the National Archives of Canada describes another source of research assistance, and although the Canadian Centre for Information and Documentation on Archives focuses mostly on research undertaken by government departments, it nonetheless supports the dissemination of archival research.<sup>95</sup> The National Archives also offer logistical support to research in financing training sessions and scholarly symposia.

Internationally, two articles describe the support of the ICA and UNESCO to archival research.<sup>96</sup> The articles describe the contributions of the publications within the RAMP program at UNESCO to the development of research, as well as the co-operative UNESCO/ICA efforts in the development of research assistance programs.

### **Conclusion**

As a practice, archival science is very ancient. A recent book by a French author traces it back to the 3<sup>rd</sup> century BC.<sup>97</sup> Archival science as a discipline, however, is a contemporary phenomenon.<sup>98</sup> It should therefore come as no

92 Gagnon-Arguin, “La recherche en archivistique,” p. 267.

93 Michael R. Hill, *Archival Strategies and Techniques. Qualitative Research Methods* (Newbury Park, CA, 1993).

94 Gagnon-Arguin, “La recherche en archivistique,” p. 259.

95 Jean-Pierre Wallot, “Les Archives nationales du Canada et l’aide à la recherche en archivistique,” in GIRA, *La place de l’archivistique dans la gestion de l’information*, pp. 282–83.

96 Frank B. Evans, “Archives and Research: A Study in International Cooperation between UNESCO and ICA,” *Archives et bibliothèques de Belgique* 57, no. 1 (1986), pp. 127–58; and “Promoting Archives and Research: A Study in International Cooperation,” *American Archivist* 50 (Winter 1987), pp. 48–65.

97 Paul Delsalle, *Une histoire de l’archivistique* (Ste-Foy, 1998), p. 11.

98 Jean-Yves Rousseau, Carol Couture, and collaborators, *Les fondements de la discipline archivistique* (Ste-Foy, 1994), p. 27.

surprise that we found only forty texts dedicated to the issue of research on archival science. The manner in which we chose to present this literature, however, shows that archival research gravitates around general considerations (justification/pertinence/object), specific research fields, means of diffusion of results, and training and research assistance programs. Our article concentrated its efforts on specific research fields, including archival functions such as appraisal and the care of electronic records. Not wanting to draw any premature conclusions, we must remember that the objective of this status report was not to inventory all research undertaken in archival science, although such an inventory would have made it possible to establish a more precise evolution of research tendencies in our discipline. Rather, we attempted to present an overview of those articles dealing with research as a scholarly activity. This perspective has certainly omitted an important number of works that essentially document the results of research. But we believe that we have succeeded in presenting the articles that document the progress of the archival discipline.

As is the case in any discipline, archival research evolves slowly. The majority of authors agree that archival research is essential to the development of the profession. The electronic era compels the most dynamic elements of our profession to find solutions, to open up new avenues.<sup>99</sup> Although it may be modest, archival research is in good shape. Unlike its sister disciplines, it has purposely chosen not to build the “wall” between scholars and practitioners.<sup>100</sup> This collaborative effort will ensure the future of both the archival discipline and the profession.

### Appendix

**Table 1**

#### **Typology of Research Fields in Archival Science**

<b>Research Field</b>	<b>Content Description</b>
1. The object and aim of archival science	<ul style="list-style-type: none"> <li>• Archives as object (information/document/record)</li> <li>• Goal: preservation, access, administrative efficiency, etc.</li> <li>• Usefulness of archives</li> </ul>
2. Archives and society	<ul style="list-style-type: none"> <li>• Role and place of archival science in society</li> <li>• Archival science as a discipline</li> <li>• Archival science as a profession</li> </ul>

99 Hedstrom, “Understanding Electronic Incunabula.”

100 Stephenson, “Deciding Not to Build the Wall.”

3. The history of archives and of archival science	<ul style="list-style-type: none"> <li>• History of archives</li> <li>• Development of the principles and foundations of archival science</li> </ul>
4. Archival functions	<ul style="list-style-type: none"> <li>• Record creation, appraisal, acquisition, arrangement, description, preservation, accessibility</li> </ul>
5. The management of archival programs and services	<ul style="list-style-type: none"> <li>• Theory and practice of organizations</li> <li>• Program planning and evaluation</li> <li>• Management, marketing and public relations</li> </ul>
6. Technology	<ul style="list-style-type: none"> <li>• Information science as pertaining to archives</li> <li>• Information, telecommunications, and network systems</li> </ul>
7. Types of media and archives: electronic records	<ul style="list-style-type: none"> <li>• Audiovisual, electronic, iconographic, and textual archives</li> <li>• Microforms and other media or types of archives</li> </ul>
8. Archival environments	<ul style="list-style-type: none"> <li>• Government institutions</li> <li>• Teaching and research institutions</li> <li>• Religious institutions</li> <li>• Other institutions</li> </ul>
9. Specific issues related to archives	<ul style="list-style-type: none"> <li>• Ethics</li> <li>• Access to information and privacy</li> <li>• Others</li> </ul>

**Table 2**

**Typology of Research Fields in the Management of Electronic Records  
(Margaret Hedstrom)**

<b>Research Field</b>	<b>Content Description</b>
1. Which relationships can be established among functions, activities, organizational structures, and information systems?	<ul style="list-style-type: none"> <li>• Electronic records within a global organizational context</li> <li>• Impact of technologies on records created by organizations</li> <li>• Impact of the automation of functions on records</li> </ul>



<p>2. What new kinds of records are generated by information technologies?</p>	<ul style="list-style-type: none"> <li>• Typology of documents created by information technologies</li> <li>• Introduction of new forms of documents</li> <li>• Migrating traditional types of documents to new media (is a digitized map still a map?)</li> </ul>
<p>3. Can archivists intervene at the critical moment when new technologies are developed and introduced in an organization?</p>	<ul style="list-style-type: none"> <li>• Archivist's role in the conception of information systems</li> <li>• Taking into account the organization context in which an information system is introduced</li> <li>• Archival requirements for information systems</li> </ul>
<p>4. How can electronic records influence archival practices in information preservation and accessibility?</p>	<ul style="list-style-type: none"> <li>• Influence of electronic records on archival practices such as appraisal, preservation, accessibility</li> <li>• Financial consequences of the management of electronic archives</li> </ul>
<p>5. How do the requirements of the management of electronic records alter the archival profession?</p>	<ul style="list-style-type: none"> <li>• Impact of electronic records management on the principles and foundations of archival science</li> <li>• Electronic records as evidence of the activities of organizations, even of society</li> </ul>

**Table 3**

**Typology of Research Fields in the Management of Electronic Records  
(Richard J. Cox)**

<p><b>Research Field</b></p>	<p><b>Content Description</b></p>
<p>1. Developing broader education and practical training in the management of electronic records</p>	<ul style="list-style-type: none"> <li>• Analysis of university programs</li> <li>• Study of continuing education</li> </ul>
<p>2. Employer needs in the management of electronic records</p>	<ul style="list-style-type: none"> <li>• Needs assessments</li> <li>• Market analysis</li> <li>• Studies of archival milieus and their expectations</li> </ul>

3. Archival perspectives on the management of electronic records	<ul style="list-style-type: none"> <li>• Archival functions and electronic records</li> </ul>
4. Electronic records management programs in organizations	<ul style="list-style-type: none"> <li>• Case studies on the introduction of programs in organizations in order to determine success factors</li> </ul>
5. Archivists' attitudes towards technology	<ul style="list-style-type: none"> <li>• Studies of attitudes in order to develop training strategies</li> </ul>
6. Archival profession and technology	<ul style="list-style-type: none"> <li>• Impact of technology on the archivist's work environment</li> <li>• Role of archivists in office environments</li> </ul>

**Table 4**

**Typology of the National Research Program in the Management of Electronic Records**

**National Historic Publications and Research Commission (USA)**

<b>Research Field</b>
1. Identifying the functions and data necessary for the management of electronic records
2. Technical, conceptual, and economic implications of the creation and preservation of data as well as the related information elements for their context and description, in electronic formats, in various applications
3. Preservation of software-dependent data objects for future use
4. Use of information system metadata to support electronic records management and archival requirements
5. Archival requirements are integrated into the development of information systems
6. Electronic records management policy
7. Developing an electronic records management program
8. Incentives that can contribute to creator and user support for electronic records management concerns
9. Barriers to the implementation of an electronic archival records management program
10. Archivists' knowledge of technology and electronic records

**Table 5**

**Typology of Research Fields in the Management of Electronic Records  
(David Bearman and Jennifer Trant)**

<b>Research Field</b>	<b>Content Description</b>
1. Description of an <i>electronic record</i>	<ul style="list-style-type: none"> <li>• Systematic research of current definitions and their related concepts (metadata, content, context, structure, etc.)</li> </ul>
2. Electronic records management policy	<ul style="list-style-type: none"> <li>• Needs assessment</li> <li>• Cost/benefit studies</li> </ul>
3. Recognizing record-creating events	<ul style="list-style-type: none"> <li>• Studies on the activities that generate electronic records</li> <li>• Study of the archival needs of users</li> </ul>
4. Dependency among hardware, software, metadata, and organizational structures	<ul style="list-style-type: none"> <li>• Study on the integrity of electronic records</li> </ul>
5. Maintaining electronic records over time	<ul style="list-style-type: none"> <li>• Study on the migration of data to other media</li> </ul>
6. User needs and the retrieval of electronic information	<ul style="list-style-type: none"> <li>• Study of user information needs</li> </ul>

