# Are You Being Served? Historians and the Search for Primary Sources*

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RÉSUMÉ Durant les dernières années, de plus en plus de temps et d'argent ont été consacrés par les institutions d'archives au développement d'instruments de recherche en ligne et d'autres outils électroniques pour repérer l'information. Cependant, ces développements se sont basés sur peu d'études concernant l'efficacité de ces outils ou encore le comportement des utilisateurs dans la recherche d'information. Cet article présente les résultats d'un sondage auprès d'historiens universitaires du Royaume-Uni quant à leur comportement dans la recherche d'information. L'auteur suggère que, même si les historiens ont différentes méthodes pour retrouver l'information, des modèles et des préférences clairs apparaissent. De plus, il suggère que le facteur prédominant expliquant le comportement des historiens dans la recherche d'information est le type ou le genre de source recherché. Enfin, les répercussions de ces résultats sur le développement des systèmes d'information sont présentées.

ABSTRACT In recent years archives have spent increasing amounts of time and money developing on-line finding aids and other electronic retrieval tools. However, there have been relatively few studies of the effectiveness of such tools or of users' information-seeking behaviour on which to base these developments. This paper presents results from a survey of UK academic historians' information-seeking behaviour. It suggests that although historians have varied information retrieval methods, clear patterns and preferences are visible. Moreover, analysis suggests that the predominant factor to explain historians' information-retrieval behaviour is the type, or genre, of source concerned. Lastly, the implications of these results for the development of archival information systems are considered.

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## Introduction

This paper presents results from a survey of academic historians' information-seeking behaviour in the United Kingdom (UK). It analyses historians' search methods for primary sources and aims to inform the development of on-line archive retrieval systems whilst emphasizing the importance of user evaluations. The survey, combined with interviews, shows historians employing a wide variety of information-seeking methods from following leads in print, through on-line finding aids to serendipity. Nevertheless, clear preferences, patterns, and relationships are evident that raise interesting challenges for the development of on-line archival access in a resource-scarce environment.

These findings are the result of a collaborative research program that examines the ways in which academic historians locate primary sources, how archival services are developing on-line access provision, and what both historians and archivists are doing to train future users. A parallel study in the USA by Dr. Helen Tibbo,[1] using identical methods and research instruments, will ultimately enable a comparative analysis of historians and archivists on both sides of the Atlantic.

Although this study looks exclusively at academic historians, this is not to imply that they should receive special treatment or that their needs are greater than other user groups. Academic historians are but one group of users, and research could and should be done on other archive user groups such as professional researchers, genealogists, local historians, one-time visitors, schoolchildren, and archive staff themselves. Nevertheless, for the purposes of this research there were a number of compelling reasons for studying academic historians. Although for many archives academic historians are not the largest user group, they are one of the most important. Historians' publications are one of the most widely distributed means of archives manifesting their cultural and societal value. It is through historians' research that archival data and information becomes knowledge, developing meaning and understanding about ourselves, our past, and our place in the world. Academic historians also tend to make frequent and long-lasting use of a variety of archives, and can be expected to be relatively experienced users. Generally, they have access to good IT infrastructure and support, even if they are not always expert in their use. They also have the practical advantage of being an identifiable, measurable, and coherent user group.

The origins of this research lie in two areas: information systems design and trends in historical research. Archives are spending an increasing amount of time, money, and effort in developing on-line finding aids. Many archives are embracing the digital age even further by providing digital surrogates of items

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in their collections. However, the majority of archives are doing so without having analyzed users' information-seeking behaviour. In a July 2003 survey of seventy UK archives, only thirty-five had conducted any form of user survey, only eight encompassed user needs, and of these just four dealt with on-line catalogue information.[2] It is axiomatic that information systems should be built around user needs and not vice versa. If archives are to maintain their high standards of service in the digital age, it is fundamental that these are based on a thorough understanding of users' information-seeking behaviour and requirements. Few studies, however, have sought to analyze this issue and there appears to be an assumption that the print paradigm of archival finding aids will translate into the digital age with relatively little modification. As Richard Cox has eloquently stated, "We also know that many of our traditional views about books and records, libraries and archives, rest on complex assumptions about society, technology, information, and information use that are, in fact, quite prone to change, and these are prone to be challenged."[3] Traditional methods of appraisal, cataloguing, and use may well stand the test of time but it would be dangerous to assume so.

On the other hand, many historical research topics cut across repositories, collections, fonds, and media. History is becoming more interdisciplinary and historians are using an ever-wider range of sources, particularly as born-digital records and digital surrogates come on-line. Historical research has always been a complex process of searching, retrieving, sifting and sorting, and in developing on-line access tools archives have a unique opportunity to take account of these patterns.

As this paper will make clear, even a narrowly defined group of users such as academic historians employs a diversity of information-seeking methods. There is certainly no unwillingness on their part to use on-line methods but equally clear is that current electronic and on-line provision does not accommodate this diversity. Whilst increased teaching and administrative duties have conspired to reduce the time available for archival research, developments such as the Research Assessment Exercise have put greater pressure on historians to increase research output.[4] Surrounded by ever more efficient means of retrieving information, historians, as well as other user groups, are not likely to remain tolerant of archival services that do not perform in a com-

2 Seventy responses were received from a survey of 150 UK archives conducted as part of this research project. The results will form a future paper.

3 Richard J. Cox, "Access in the Digital Information Age and the Archival Mission: the United States," *Journal of the Society of Archivists* 19, no. 1 (1998), p. 26.

4 The Research Assessment Exercise (RAE) is a national, five-year assessment of departments' research performance in the United Kingdom. The primary measure used in this assessment is the publication output of individual academics. RAE performance determines the distribution of £5 billion of public research funds.

parable manner. Historians and archivists do, however, share some important principles. Both need to understand the context of creation, to know who created a record and why, and its custodial history. But how should this basic building block of research be accessed and presented, to what level of detail, and what additional information and tools are required to build enhanced research resources?

It is hoped this paper will help provide answers to some of these questions, but the means to put them into practice also require development. The advent of such tools as EAD[5] and collection management systems and standards such as ISAD(G)[6] go some way to help meet different challenges but they are a long way from providing complete solutions. For example, XML search tools and query languages lag behind the development of XML itself.[7] Creating EAD finding aids is a time-consuming process and XML author/editors do not yet provide the ease of use with which those working in HTML are familiar. Most content management systems only provide internal collection management, even if they have the capability to provide public access, and no one has yet built an effective digital repository. Accepted international descriptive standards are in their infancy and then only at higher levels. Moreover, the majority of archives face severe resource constraints that limit their ability to convert finding aids retrospectively and populate content management systems. Of course many of these are not new problems. Archives have never been able to catalogue and describe all the material in their collections or to the same level of detail. A recent survey of archives in Scotland found that only 4 per cent of local authority archives and 13 per cent of special repositories had "good" quality finding aids, with the majority of archives having poor or very poor finding aid provision.[8] Only 18 per cent of the Scottish archive services surveyed had a published guide to their holdings.[9] In these circumstances it is even more important that available resources be directed in the manner best able to meet the information-seeking behaviour of users. The advent of on-line access does

5 EAD is Encoded Archival Description, a standard for encoding the structure of archival finding aids. EAD is a Document Type Definition (DTD) of the Standardized General Mark Up Language (SGML). EAD can also be encoded in Extensible Mark-up Language (XML), a simpler version of SGML.

6 ISAD(G), now in its second edition, known as ISAD(G)2, is the internationally recognized General International Standard for Archival Description.

7 XQuery is a recently developed query language applicable across many types of XML data. See <http://www.w3.org/TR/xquery/>. XPath is a longer established, but related, development that addresses the structure of an XML document (its nodes) and also enables pattern matching with these nodes. See <http://www.w3.org/TR/xpath.html> and <http://www.w3.org/TR/xpath20/>.

8 Archives Services in Scotland Mapping Project Board, *An Archival Account of Scotland: Public and Private Sector Archive Services in Scotland: Funding Opportunities and Development Needs* (February 2000), pp. 18–20.

9 Ibid.

add new demands on archival resources but also provides new opportunities. This is not just an opportunity to better understand users' information-seeking behaviour but to define archival services in the digital age.

**Archives and User Studies**

User needs have always figured in the provision of archival services, but it is an issue that has increasingly come to the fore. Questions have arisen surrounding different constituencies of archival users, how these have changed, what their needs might be, and how they might be met. Ian Mortimer, Stacey Gee and Jenny Moran, and Martin Taylor have debated the extent to which it is desirable and practical to discriminate among different types of users, particularly professional historians, and the services provided to them.[10] Equally valid perspectives on archival services have also been made by what Mortimer would classify as "recreational users."[11] The growing recognition of the diversity of users is most welcome and that such debates are taking place is an indication of the necessity of user studies, an area all too often neglected by the archival profession. As Michael Cook has commented,

> User studies have traditionally received a low priority among archives services ... there have as yet been few systematic studies of the response of lay users to archival finding aids, in the context of any British archive service, nor have user organizations much concentrated on this aspect. Although there are many difficulties in implementing it, an extensive user study is clearly overdue.[12]

If the need for more systematic user studies is now more widely recognized, the nature of such studies still tends to be concerned with managing the "supply side" of archival services. That is the need, in Cook's words, to address three aspects of the problem facing archives: "the organization of the user services within the archives; the education and disciplining of the user group; and the provision of resources."[13] These are all important areas where user studies can contribute, but what is really required is an evaluation of the demand side of the equation – what do users want and how do they want it? Until this takes place questions of discriminating among users, organization of services, user education, and resource provision will at best be speculative and at worst hypothetical. Unless archives first arrive at a better understanding of how their users work, hand-wringing over the price of photocopying, reservation of

10 Ian Mortimer, "Discriminating Between Readers: the Case for a Policy of Flexibility," *Journal of the Society of Archivists* 23, no. 1 (2002), pp. 59–67.

11 Rosemary Bigwood, "A User's View of the Archives," *Scottish Archives* 6 (2000), pp. 31–36.

12 Michael Cook, *The Management of Information from Archives* (Aldershot, 1999), p. 150.

13 Ibid., p. 248.

desks, and the number of volumes a reader can consult will be like shifting the deckchairs on the Titanic. It may be a worst-case scenario but nor is it entirely unrealistic to imagine a time when, unless an archive has an effective on-line presence, it will have no users, either physical or virtual. But surely the historian will always need to use the original primary source? In many cases they will, but with the burgeoning volume of primary source collections available from commercial publishers, often providing sophisticated search facilities not available on archive Web sites, that need may be drastically reduced. For example, searching the UK National Archives catalogue for the terms "immigrants" or "migration" in the cabinet papers of the MacMillan period returns less than a dozen references to statistical information for sub-committees.[14] Searching on the Adam Matthew Publications on-line version of the MacMillan cabinet papers reveals that immigration was discussed at full cabinet level and provides a direct link to the relevant document.[15]

It is imperative to understand how users access archival material before considering the organization of search room services. Indeed, it may be possible to eliminate, or at least alleviate, many of the problems that Cook and Mortimer et al. have identified. Duff and Johnson have identified the first stage of research as identifying the archives, finding aids, sources, or collections required. This orientation process can occur for even the most experienced researcher when confronted with a new archive, new material, new topics, or re-visiting a familiar archive after a period of absence.[16] If print finding aids do not meet users' needs, search room staff and duty archivists are able to explain, educate, and guide the user. In the on-line environment the consequences of poorly designed finding aids are more serious. If the Internet becomes the first de facto information access point, there is a danger that users may not find archival material at all, or make inaccurate assumptions about collection contents, relevance, context, provenance, or related records.

**Information Seeking in the Digital Environment**

Considering how important it is to understand users' behaviour in the digital age, it is surprising how few studies have directly addressed the issue. In the

14 Immigration was a hot topic of political and public debate during this period, as migrants from Commonwealth countries, particularly the Caribbean and Asia, became significant ethnic minorities in the UK.

15 This search of the UK National Archives catalogue employed the terms immig* and migr*, 1957 to 1963, series code CAB. The Adam Matthews Publication of the MacMillan cabinet papers does of course require a £4,000 initial subscription and £125 annual fee. Only the Adam Matthew version allows access to view digital surrogates. I thank Aidan Lawes for this example.

16 Wendy Duff and Catherine A. Johnson, "Accidentally Found on Purpose: Information-Seeking Behavior of Historians in Archives," *Library Quarterly* 72, no. 4 (2002), pp. 14–15.

UK there have been a relatively limited number of studies of humanists' information-seeking behaviour and even fewer of historians'. This is the first study to examine UK historians' information-seeking behaviour in the digital environment. There is, of course, a precedent for "end-user" studies in the library sector, with a well-developed body of practice established.[17] Many other studies are concerned with human-computer interaction, system design, or the sociological and psychological patterns of knowledge and information acquisition.[18] Valuable and informative though these studies are, they only indirectly address the needs of archival services or their users.

In 1998, Porter and Greenstein's research for the Arts and Humanities Data Service was one of the first to look at the information needs of humanists.[19] Porter and Greenstein were concerned with humanists' use of information technology in higher education and, contrary to popular wisdom, were upbeat about the prospects of user needs analysis.

> Rather than being inarticulate or uncomprehending, users and potential users who we consulted were very clear about what they required from digital information, from related support and training services, and from information technologies more generally. They were equally clear about where current resources and services were lacking and how they may be improved. Additionally, their expectations were not at all fantastic with regard to current technical capabilities. Lastly, they were not largely (let alone exclusively) concerned with funding, desktops or network connections. Rather, they exhibited an acute awareness of financial constraints and an associated concern that scarce investment should be deployed strategically and to the greatest effect.[20]

In spite of this promising outlook, few others have undertaken user needs analysis beyond the higher education sector. This is despite a number of national policy documents expressing concern that the use of information technology should respond to user information requirements.[21]

17 D.N. Covey, *Usage and Usability Assessment: Library Practices and Concerns* (Washington, 2002).

18 D. Zeitlyn, M. David, and J. Bex, *Knowledge Lost in Information: Patterns of Use and Non-use of Networked Bibliographic Resources,* British Library Research and Innovation Centre Research Report no. RIC/G/313, Office for Humanities Communication Publication 11 (London, 1999); A. Large, L.A. Tedd, and R.J. Hartley *Information Seeking in the Online Age: Principles and Practice* (London, 1999).

19 Sarah Porter and Daniel Greenstein, *Scholars' Information Needs in a Digital Age* (London, 1998).

20 Ibid., p. 10.

21 See for example: *Connecting the Learning Society. The Government's Consultation Paper on the National Grid for Learning* (October 1997); and S. Ross, *Funding Information and Communications. Technology in the Heritage Sector. Policy Recommendation to the Heritage Lottery Fund* (January 1998).

There have been a number of general surveys of archival users that indicate that this is an opportune time to undertake more detailed analysis. Since 1998 the *Survey of Visitors to British Archives* has included questions on users' information technology use. As early as 1998 the survey reported that 70 per cent of respondents were confident in the use of computer systems and were "enthusiastic about being able to use the Internet to access archival services."[22] By May 2003, 58 per cent of the population of the UK owned computers and 47 per cent had Internet connections.[23] Unfortunately, despite this latent enthusiasm for computer technology we know little more than we did in 1998 about users' information-seeking behaviour in the on-line world. The High-level Thesaurus project (HILT) recently commented that there was "very little information available on the needs and behaviour of users as regards subject searching in a distributed environment."[24]

There are, of course, some notable exceptions, but these tend to highlight the fact that existing user studies focus on front-end delivery. The development of the PROCAT (Public Record Office Catalogue) illustrates an early and ongoing integration of user feedback into the development process.[25] The Rapid Application Development process adopted by the UK Public Record Office (now The National Archives) served not only to represent the diversity of existing users but also to reach out to socially excluded groups. Although user input to PROCAT development largely covered front-end issues such as interface design, settings, printing, and system errors it also included system usage and search strategy. Moreover, once the catalogue was launched, system use and strategy responses ran at twice the level of any other category of feedback.[26] This buttresses Porter and Greenstein's view that users can make valuable contributions to the way on-line archival information is organized and used.

The National Archives in the UK have also led the way in applying the theories and skills of customer focus and marketing to its program of customer service enhancement. Although couched in different terms, this customer focus and marketing approach shares with user evaluations the core value of listening to customers (or users) and meeting as many of their needs as possible.[27] There are examples in the UK that demonstrate the benefit of user consultation in

22 Adrian Ailes and Iain Watt, "Survey of Visitors to British Archives, June 1998," *Journal of the Society of Archivists* 20, no. 2 (1999), p. 177.

23 "Consumers' use of Internet," *Oftel Residential Survey Q13, May 2003* (31 July 2003).

24 Dennis Nicholson et al., *HILT: High-Level Thesaurus Project – Final report to RSLP & JISC* (December 2001), para. 3.1.2, p. 12, available at <http://hilt.cdlr.strath.ac.uk/>.

25 Jone Garmendia, "User Input in the Development of Online Services: The PRO Catalogue," *Journal of the Society of Archivists* 23, no.1 (2002), pp. 51–57.

26 Ibid., p. 55.

27 E. Hallam Smith, "Customer Focus and Marketing in Archive Service Delivery: Theory and Practice," *Journal of the Society of Archivists* 24, no. 1 (2003), pp. 35–53.

developing on-line services. Both the GASHE and NAHSTE projects formed academic user groups.[28] These user groups provided ongoing evaluation, helped ensure resources were relevant and useful, and assisted the projects in determining priorities and options. This resulted in NAHSTE altering typical archival terminology to a set of more meaningful descriptive terms for this user group. In initiatives such as the Archives Hub, evaluation exercises have taken place in the pilot stage and it is hoped that this will be an ongoing process.[29] Undoubtedly there are other valuable user studies but identifying them is problematic, as many remain unpublished. This makes building an understanding of archival users' information-seeking behaviour more difficult and also runs the risk of archives re-inventing the wheel.

The situation in North America, where a number of important studies on historians' information-seeking behaviour have been conducted, is a little better than in the UK. As part of the USA side of this project, Dr. Helen Tibbo has already published results from the first and second rounds of surveys of US historians. This indicated that although print-based information retrieval methods predominate, historians have also embraced a variety of on-line tools.[30] This presents archivists with the unenviable proposition of having to maintain and develop both print and electronic finding aids, at least for the time being. Others, notably Wiberley, Jones and Andersen, have examined historians' and humanists' adoption and use of information technology.[31] What these longitudinal studies highlight is that the information environment is a rapidly changing one. For archives this need to make long-term strategic decisions on resource allocation is an additional problem. However, it also emphasizes the importance of undertaking ongoing user studies, not just one-off, project-related exercises. Although this paper is based on historians' information-seeking behaviour during their most recent research it will be important to re-visit this sample in years to come.

Previous studies have provided us with some understanding of how historians go about finding and using sources for their research. A combination of printed sources, such as footnotes, references, bibliographies, and finding aids

28 Gateway to Archives of Scottish Higher Education (see <http://www.gashe.ac.uk>) and Navigational Aids for the History of Science and Technology (see <http://www.nahste.ac.uk>).

29 Amanda Hill, "Bringing Archives Online through the Archives Hub," *Journal of the Society of Archivists* 23, no. 2 (2002), p. 246.

30 Helen R. Tibbo, "Primarily History: How US Historians Search for Primary Sources at the Dawn of the Digital Age," *American Archivist* 66, no. 1 (Spring/Summer 2003), pp. 9–50.

31 See, for example, S. Wiberley and W.G. Jones, "Time and Technology: A Decade-long Look at Humanists' Use of Electronic Information Technology," *College and Research Libraries* 61, no. 5 (September 2000), pp. 421–31; and D.L. Andersen, "Academic Historians, Electronic Information Access Technologies, and the World Wide Web: A Longitudinal Study of Factors Affecting Use and Barriers to that Use," *The Journal of the Association for History and Computing* 1 (June 1998), pp. 1–21.

were used in conjunction with electronic tools such as e-mail, listservs, and informal contact with colleagues and archivists.[32] Until now what has been absent was a study that focussed exclusively on historians, primary sources, and information-seeking behaviour since the advent of significant on-line finding aids.

Duff, Craig, and Cherry's recent survey of Canadian historians included, in a range of topics, three questions on how historians became aware of and located information needed in their research.[33] In these results archival sources, finding aids, archivists, and footnotes were all considered either very important or somewhat important for identifying and locating information by at least 83 per cent of respondents.[34] The World Wide Web was rated very important or somewhat important by 45 per cent of respondents, although only about 15 per cent rated the World Wide Web very important, a lower figure than for colleagues, published bibliographies, indexes to publications, and on a par with book reviews.[35] Although access via the World Wide Web shows considerable promise in this study, particularly when it delivers digital surrogates of image material, what is most noteworthy is the high rating of archival sources themselves as a means of becoming aware of and locating information needed for research. Information in one set of records points to other related information, corroborating or contradictory evidence in other files, collections or archives. This may seem obvious, however, as Duff, Craig, and Cherry point out, this is not a feature that had been identified in other studies.[36] Moreover, there is the strong implication that finding aids that do not make cross references, or provide cross searching, to related records elsewhere would not facilitate historians' most important means of locating information. It is likely that historians would find related records in the course of their research, but when 50 per cent of historians cite the lack of finding aids and 37 per cent report insufficiently detailed finding aids as barriers to access, should such

32 As well as Wiberley and Jones and Andersen see, for example, Helen R. Tibbo, *Abstracting, Information Retrieval and the Humanities: Providing Access to Historical Literature* (Chicago, 1993); Diane L. Beattie, "An Archival User Study: Researchers in the Field of Women's History," *Archivaria* 29 (Winter, 1989–90), pp. 33–50; Charles Cole, "Information Acquisition in History Ph.D. Students: Inferencing and the Formation of Knowledge Structures," *Library Quarterly* 68, no. 1 (1998), pp. 33–54; Donald O. Case, "The Collection and Use of Information by Some American Historians: A Study of Motives and Methods," *Library Quarterly* 61, no. 1 (1991), pp. 61–82.

33 Wendy Duff, Barbara Craig, and Joan Cherry, "Historians' Use of Archival Sources: Promises and Pitfalls of the Digital Age," *The Public Historian* 26, no. 2 (Spring 2004), pp. 7–22. Other included topics were: the barriers to accessing information; the need for personal copy of finding aid; formats historians use, like most, like least, and find most useful; why historians prefer to use original sources; and the need for copies of archival sources.

34 Ibid., p. 10.

35 Ibid., p. 11, Figure 1.

36 Duff, Craig and Cherry, passim.

obstacles be placed in their way?[37] If such insights are available from North American historians, what might their colleagues in the UK have to reveal?

## Sample Methodology

This project sampled 800 historians from a total population of 2914 UK historians. These historians work in the 118 Universities and Higher Education Colleges (HE) that teach history, from a total of 166 UK HE institutions. The sample was based on the on-line edition of the *Teachers of History in the Universities of the United Kingdom* published annually by the Institute of Historical Research at the University of London. *Teachers of History* has the advantage that it includes historians working in departments such as European Studies, who can easily be overlooked by searching through university Web sites. This is particularly the case in smaller and newer HE institutions that are less likely to have their faculties, schools, and departments arranged along traditional lines. By using *Teachers in History* the danger of missing these "hidden historians" and producing a sample skewed towards the larger and longer established institutions is avoided.

Eighty of the 118 institutions were randomly sampled, then two systematic samples of individual historians undertaken, to produce two sets of forty institutions, each set containing 400 historians. The demographic characteristics of these samples were checked against the total population profile of historians. The 2001 Research Assessment Exercise rating for each institution's history department were then added to the sample. This enables information retrieval strategies to be cross-tabulated against research performance ratings. RAE ratings are expressed in terms of a standard scale applied across all disciplines, ranging from 1 to 5* (see Appendix A for scale).[38]

### *Survey and Interviews*

The surveys were administered in two rounds between September 2001 and January 2002. A combination of written and e-mail contact was used and

37 Ibid., p. 12.

38 Under the Research Assessment Exercise all research submitted by institutions is allocated to one of sixty-eight discipline-based units of assessment. All but five institutions made a submission in 2001 under UoA 59, History. Historians at the University of Bradford, who are in the Department of European Studies, and those at the University of Salford in the Department of Politics and Contemporary History were submitted under UoA 48 (European Studies). Historians at Brunel University in the Department of American Studies and History were submitted under UoA 45 (American Studies). Historians at the University of Brighton in the Department of Historical and Critical Studies do not appear to have been submitted under any UoA. Nor were historians at the University of Buckingham, Britain's only private university. As the RAE criteria and scale are the same across all disciplines, the non-history UoA results were included. Where no submission was made a 0 was entered.

respondents could complete the survey on-line, electronically, or in print. Two sets of reminders were sent at monthly intervals, alternating between e-mail and letter to even out respondents' communication preferences.

The survey consists of five sections from A to E. The sections ask questions on demographic information, current or last research, types of source used, how these sources were located, and how historians taught their students to locate material. The UK and USA surveys are identical except for Anglicizing academic ranks and finding aid examples for the UK. A copy of the survey instrument is provided in Appendix B.[39]

The survey asks about thirty-four different retrieval methods, such as following leads in print, visiting a repository Web site, phoning an archive, or asking a colleague. For convenience these different methods can be grouped into five categories of print, electronic, contact, informal, and assisted. As their names suggest, the print category includes all print-based retrieval methods, whether leads in a book or a repository guide. The electronic category includes all electronic and on-line methods. The contact category includes visiting, writing, e-mailing, or telephoning a repository, whilst informal methods include asking a colleague, serendipitous leads, or browsing the stacks. Assisted methods include seeking the help of either an archivist, librarian, or a hired research assistant.

A series of structured face-to-face and telephone interviews took place with twenty-five historians who had not participated in the survey during August and September 2002. The interview instrument followed a similar structure to the survey but with the additional aim of acquiring information on the effectiveness of retrieval methods. To help establish historians' priorities in how their information needs might be better met we also asked interviewees what their priority would be in directing a grant to a repository.

### *Response Rates*

The survey response rate was a disappointing 13.1 per cent (105 surveys), and far less than the 37 per cent response rate (258 surveys) achieved by the US side of the project. There was no appreciable difference in response rates between the two rounds with a 13.2 per cent response rate (53 surveys) in round one compared to 13 per cent (52 surveys) in round two. In order to try and increase the response rate telephone reminders were conducted in June 2002. Despite pledges from a number of historians to complete the survey, only one further survey was returned.

39 Section E of the questionnaire that asked how the respondent taught research students to locate sources is not within the scope of this paper and has been omitted from Appendix B. A full copy of the questionnaire can be found at <http://www.hatii.arts.gla.ac.uk/research/> under Primarily History.

The response rate presents a number of problems for this analysis. For a 95 per cent confidence level with a 5 per cent margin of error we would need 259 respondents (32.4%) from the sample of 800 historians. Once respondents who do not cite use of a UK archive are excluded from our returns the response rate falls to one hundred (12.5%).[40] For a 95 per cent confidence level in the results we have an unacceptably high 9.2 per cent margin of error. This margin of error may not be too significant when examining overall retrieval patterns based on aggregate data, but it has had a major impact on the way in which detailed analysis of the returns has been conducted.

Although the low response rate complicates further analysis, it is in itself a revealing feature. The low UK response rate suggests that archival retrieval strategies are a lower priority for UK than US historians or an issue that they do not see as particularly relevant. Certainly there is no variation in the two surveys, administrative procedures, or academic workloads to explain the variations in response rates.

In comparing the responses with the sample population some variations are evident. Table 1 indicates the response rates by gender for the survey returns against the sample population. Here female historians are over-represented in the returns by 7 per cent compared to the sample population.

Table 2 provides the breakdown of staff according to their institutional research ranking for the respondents and the sample population. When comparing the study population with the survey returns, those in 3b, 3a, and 4 rated institutions are marginally under represented and those in 5 rated institutions slightly over represented.

Table 3 shows the breakdown of staff by institutional and academic rank in the surveys returned. When one compares the academic rank of historians from the survey returns with the sample population, greater discrepancies appear than with either gender or institutional rank. Lecturers (both fixed term and permanent) make up 44 per cent of the population but only 26 per cent of returned surveys. This under representation is reflected in over representation by other ranks of historian. Senior or principal lecturers make up 25 per cent of the total population but 35 per cent of survey returns; professors (all grades) make up 18 per cent of the population but 26 per cent of survey returns. Similarly, deans and heads of department make up 3 per cent of the total popula-

40 It was not thought desirable nor practical to try and restrict the sample population according to research interest. A non-UK research area does not necessarily mean a historian does not use UK archives. Likewise a UK topic may make use of archives abroad. However, the survey asked historians to name the main archives, special collections, or repositories they use in the research in question. The survey also asks historians about specific UK-based archival tools such as the National Register of Archives (NRA) and Archon (Archives Online). Therefore, if a survey return does not name a UK archive and makes no use of a UK archival tool then it has been excluded from this analysis.

**Table 1: Response Rates by Gender and Rank of Respondents***

| Gender | % Sample Population | % Survey Returns | Lecturer (Fixed Term) | Lecturer (Permanent) | Dean or HoD | Senior or Principal Lecturer | Professor | Chaired Professor | Other |
|---|---|---|---|---|---|---|---|---|---|
| Female | 26 | 33 | 2 | 9 | 0 | 12 | 5 | 2 | 3 |
| Male | 74 | 67 | 1 | 14 | 7 | 23 | 12 | 7 | 3 |
| Total | 100 | 100 | 3 | 23 | 7 | 35 | 17 | 9 | 6 |

*UK academic ranks differ from those in the USA and Canada. There is no UK equivalent to the tenure track process (although most universities require newly qualified staff to undergo a three year probationary period). Lecturers and Senior/Principal Lecturers are expected to undertake a full range of research and teaching. The title Professor is only awarded to a few, senior academics, often nominated by their peers. The equivalent staff grade to Lecturer is Assistant Professor and to Senior/Principal Lecturer is Associate Professor. The Other staff grade includes Readers and Research Fellows. Readers are senior academics, usually appointed at Senior Lecturer grade or above, but with a greater emphasis on research.

**Table 2: Historians by Institutional Research Rank**

| Institutional Rank | Study Population | Survey Returns |
|---|---|---|
| 0 | 1 | 1 |
| 3b | 5 | 3 |
| 3a | 11 | 9 |
| 4 | 33 | 30 |
| 5 | 38 | 44 |
| 5* | 12 | 13 |
| Total | 100 | 100 |

Institutional Rank: The 2001 National Research Assessment Exercise rating. Institutions with a 0 ranking did not make an RAE submission.

tion but 7 per cent of returns. The "other" category (readers and research fellows), comprises 9 per cent of the population and 6 per cent of survey returns.

This "seniority drift" of survey returns has implications for the subsequent analysis. One might suggest, for example, that senior historians have well established retrieval strategies, know where most of their sources are located, and so undertake less extensive searching for sources since the advent of on-line retrieval tools. Therefore, they may stick with tried and trusted, non-electronic methods. However, it would be a mistake to assume that seniority equates with information retrieval Luddism, as technophobia is not the preserve of those born before the advent of the information age. Furthermore, when one looks at historians' years of service by rank a somewhat more complex position is revealed. Although the majority of professors (fourteen out of twenty-six) have over thirty years' service, the majority of senior and principal lecturers (nineteen out of thirty-five) have between four and nineteen years' service. In other words, their careers parallel the development of electronic and on-line access.

## Popular and Effective Retrieval Methods

UK historians' information-seeking behaviour reveals a combination of print, electronic, and informal methods. These aggregate trends provide useful pointers for archives in developing their on-line access tools. Some clear preferences are evident, as can be seen in Table 4 below. Print-based retrieval methods are used by the overwhelming majority of historians. Locating primary sources by following leads in books and articles is almost universal, used by 97 per cent of respondents. In second place, 89 per cent of historians

**Table 3: Historians by Institutional Rank and Academic Rank**

| Institutional Rank | Lecturer (Fixed Term) | Lecturer (Permanent) | Senior or Principal Lecturer | Dean or HoD | Professor | Chaired Professor | Other | Total |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 3b | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 3 |
| 3a | 0 | 1 | 5 | 1 | 0 | 1 | 1 | 9 |
| 4 | 1 | 5 | 12 | 1 | 5 | 3 | 2 | 29 |
| 5 | 1 | 11 | 15 | 4 | 9 | 2 | 2 | 44 |
| 5* | 1 | 5 | 1 | 0 | 3 | 3 | 1 | 14 |
| Totals | 3 | 23 | 35 | 7 | 17 | 9 | 6 | 100 |

Institutional Rank: The 2001 National Research Assessment Exercise rating.

**Table 4: Retrieval Methods in Order of Popularity**

| Rank | Retrieval Method | Percentage Use |
|---|---|---|
| 1 | Leads in Print | 97 |
| 2 | Finding Aids in Repository | 89 |
| 3 | Informal Leads | 88 |
| 4 | Printed Bibliographies | 81 |
| 5 | Other On-line Public Access Catalogues (OPACs) | 71 |
| 6 | Repository Web sites | 71 |
| 7 | Printed Repository Guides | 62 |
| 8 | Own Institution's OPAC | 60 |
| 9 | Bibliographic Utilities | 60 |
| 10 | Research Assistance | 53 |
| 11 | Write to Repository | 52 |
| 12 | Government Documents | 50 |
| 13 | National Register of Archives (print) | 50 |
| 14 | Newspaper Files | 47 |
| 15 | Documentary Editions | 39 |
| 16 | E-mail Repository | 39 |
| 17 | Telephone Repository | 34 |
| 18 | Web Search Engines | 34 |
| 19 | ARCHON (Archives Online)* | 29 |

*ARCHON (ARCHives ONline) is a directory hosted by The National Archives that includes contact details for record repositories in the United Kingdom and also for institutions elsewhere in the world which have substantial collections of manuscripts noted under the indexes to the National Register of Archives.

visit archives to consult in-house finding aids, whether in electronic (58%) or print format (87%). Printed bibliographies and repository guides were also popular at 81 per cent and 62 per cent respectively. Other print-based means of locating primary sources also proved popular: 50 per cent of respondents used government documents and the print version of the National Register of Archives (NRA), and 47 per cent used newspaper files.

Very similar figures were found on the USA side of this research. Tibbo discovered that 98 per cent of US historians followed leads and citations in book and articles; 81 per cent searched printed bibliographies; 59 per cent used government documents; 57 per cent used newspaper files; and 56 per cent searched the print NUCMC (National Union Catalog of Manuscript Collections), a close equivalent to the NRA. Lower proportions of UK historians used documentary editions (39% compared to 56%) and published print finding aids to specific collections (62% compared to 81%). Apart from these two differences it would appear that historians on both sides of the Atlantic make substantial use of print retrieval methods.

The high use of print-based retrieval methods in the UK is not at the

expense of other ways of locating sources. Almost as many historians (88%) follow informal leads, such as asking colleagues, browsing stacks, or serendipity. The use of other institutions' On-line Public Access Catalogue (OPAC) and visiting repository Web sites complete the top six retrieval methods, each used by 71 per cent of historians surveyed. Using their own institution's OPACs and bibliographic utilities (such as BIDS, BLPC, or COPAC[41]) are also popular electronic retrieval methods at 60 per cent each whilst 53 per cent of historians use some form of research assistance from archival or library staff, or from a hired researcher.

Again these figures bear a strong resemblance to those found in the USA. Somewhat more US historians use their own institution's OPAC at 78 per cent whilst slightly fewer, at 65 per cent, searched other institutions' OPACs. Fifty-eight per cent used bibliographic utilities and 61 per cent used repository Web sites.

Using Web search engines and ARCHON are the least common retrieval methods (at 34% and 29% respectively) in the UK. This level of use is lower than for printed documentary editions, printed repository guides, government documents, newspaper files, and the print NRA. These figures are slightly lower, but still comparable, to those found in the USA where 46 per cent used Web search engines and 17 per cent used the Archives USA database (roughly equivalent to ARCHON).

The high popularity of leads in print, informal leads, and bibliographies warrants explanation, as these would not seem to be the most direct means of locating primary sources. These methods share two crucial attributes: context and mediation. Books and articles provide an immediate research context and focus. Historians can judge very quickly how a source was used, what evidence it provided, how strong this evidence was, and what conclusions were based upon it. It may also provide links to other corroborating or contradictory sources or highlight gaps in the record. Peer mediation is another important property. The historian may not agree with the analysis and interpretation provided, but they can have reasonable expectations that the research will have been undertaken to professional standards and in many instances subjected to the rigours of peer review.

The high use of informal leads, particularly recommendations by colleagues, is also illuminating. Like leads in print, informal leads provide the attributes of context and mediation. These informal networks provide a further

41 BIDS is the Bath Information and Data Service. It provides on-line journals, databases, and other bibliographic services to the UK academic community (see <http://www.bids.ac.uk/>). BLPC is the British Library Public Catalogue (see <http://blpc.bl.uk/>). COPAC is a union catalogue that provides free access to the merged on-line catalogues of twenty-six major UK and Irish university research libraries, plus the British Library and the National Library of Scotland (see <http://www.copac.ac.uk/>).

research context for sources and help identify, filter, and focus on the most useful material. The elements of browsing and serendipity provide historians with a means of identifying uncatalogued or poorly catalogued material and are the only ways historians might locate previously unused sources. Together these methods provide historians with a means to tailor their retrieval to their own particular requirements. Significantly, the use of leads in print and informal methods suggests that prior to the advent of electronic retrieval historians' information needs were not entirely served by printed finding aids and repository guides.

This interpretation is supported by evidence from the interviews. Twenty-nine per cent of interviewees cited leads (in print or informal) as the most effective retrieval strategy. Subjects commented that leads in books and articles "lead to guaranteed information," "following leads builds on expertise that cannot necessarily be found in catalogues," and that it was the "most efficient way to focus research." Given these perceived benefits it is no surprise that retrieval methods associated with printed works have high usage levels. This may also explain the high use of OPACs and bibliographic utilities that would be logical starting points for locating leads in books or articles.

However, the 29 per cent of interviewed historians who cited leads in print or informal methods as most effective is far lower than the 97 per cent and 88 per cent of surveyed historians who use these methods. In fact, interviewees were equally split between following leads in print and visiting the archive as the most effective methods. This highlights the feature of historians' retrieval behaviour that the most popular retrieval methods do not necessarily equate with the most effective methods.

The picture for on-line methods is more complex than that for print and informal methods. Whilst repository Web sites and OPACs are highly used, Web search engines and ARCHON are the two least used methods at 34 per cent and 29 per cent respectively. Again the interviews provide a valuable qualitative perspective on this feature. Opinion was polarized with 19 per cent of interviewees citing on-line retrieval as the most effective method but 33 per cent responding that it was the least effective method because of concerns over the accuracy and completeness of on-line retrieval tools. One might expect Web search engines to be relatively blunt tools that provide variable results for many historians, but this criticism of other on-line catalogues obviously raises concerns.

It does not seem likely that on-line finding aids contain more errors than their paper-based equivalents, although one must allow for this possibility. More likely is that as on-line finding aids return far more responses to a query this inevitably highlights errors and inconsistencies that would not be immediately obvious in the paper version. Nor should criticisms of the completeness of on-line catalogues come as any great surprise. For most repositories the proportion of on-line catalogues is a fraction of the total. The time and

resources it takes for retrospective conversion of finding aids inevitably means that on-line catalogues will lag behind their paper equivalents for some time to come. In the interim archives will need to maintain and update both their electronic and print outputs, as the interviews with historians suggest some regard print repository guides to be the authoritative master copy.

These concerns over on-line finding aids should not be mistaken for reluctance to use on-line retrieval tools or a longing for greater print output. In spite of these concerns, the same number of interviewees ranked on-line methods as "most effective" as print and informal means. Nor is there any reluctance on the part of academic historians to use electronic retrieval methods. Ninety-one per cent of survey respondents used at least one form of electronic retrieval and 30 per cent used five or six out of the six electronic methods included in the survey.[42]

Of the other retrieval methods, 17 per cent of interviewees thought writing to archives was least effective, mainly because of the time and variability of responses whilst 12 per cent considered print bibliographies to be least effective, mainly because they were out of date or difficult to obtain. The same percentage found contacting archive staff least effective, principally because the archivist did not know the particular collection.

**Historians' Priorities**

If the wish of historians to see more electronic methods is still in any doubt, it can be dispelled by looking at the areas they would like to see prioritized. The survey asked historians what single thing they would most like an archive to do if they were able to direct a grant. Of the suggestions made, 37 per cent would provide more on-line finding aids (including retro-conversion) and 37 per cent would add greater detail to finding aids, particularly at the item level. Digitization of sources came in third at 13 per cent; only 2 per cent would enhance indexing and cross-referencing of catalogues. It will come as no surprise to archivists that 11 per cent of respondents would increase opening hours, no doubt to 24/7 given the choice. Surprisingly, only one respondent mentioned the old chestnut of photocopying fees. In identifying these priorities only a small number of historians (7%) raised concerns over the accuracy of on-line finding aids. Therefore, it would seem that although accuracy and completeness were seen as barriers to the use of on-line finding aids, this is not to such an extent that historians would prefer to do without them or not wish to see them developed further.

How these trends might translate into archival strategy requires something

42 The six methods are searching one's own institution's OPAC, other institutions' OPAC, bibliographic databases, repository Web sites, Web search engines, and ARCHON. See Appendix B for full details.

of a balancing act between historians' desire for more on-line retrieval methods, yet continued reliance on many print-based forms. Historians certainly see producing more on-line finding aids, and at a greater level of detail, as the main priorities. Whilst there remains a substantial body of print finding aids to be retro-converted, archives are also faced with the unenviable task of maintaining up-to-date print versions of their finding aids. As following leads in printed books and articles is an effective and highly used method of locating primary sources, archives also need to consider ways in which their holdings can be represented in these formats. Clearly context is important, something with which archivists are all too familiar. But the preference for print leads is more than just the context of the creation of sources. It is the context of their research and use that is particularly valuable. It would be senseless for archives to try and replicate the value of books and articles in on-line finding aids, but they could link the benefits of creation, research, and use together. How many archives keep a log of published research based on their collections? How many of these are linked to on-line finding aids? Indeed, how many historians notify archives of their research outputs? This is one small, but significant, way in which the context of a collection could be expanded whilst responding to historians' information-seeking behaviour.

Given historians' fondness for following leads in print, further consideration of relating archival collections to OPACs and bibliographic utilities would be worthwhile, although North American institutions have made more progress than those in the UK on this issue. Of course the fact that library cataloguing standards and systems do not easily represent archival collections is one of the reasons why tools such as EAD have been developed and many archivists would not want to revisit old arguments in trying to adapt or incorporate archival material into OPACs. Nevertheless, many library systems have gone beyond just an on-line public access catalogue to providing a range of learning and research resources from their Web sites. It would be relatively easy to provide reciprocal links, pointers, or even summary collection-level descriptions in library catalogues that link to more comprehensive, external archival descriptions. Anecdotal evidence from Scottish universities would also suggest that library personnel would benefit their users by being better informed of local archival collections and the range of on-line archival tools now being developed. Even where an archive and library belong to the same institution, many librarians do not know what resources the archive contains or how best to direct patrons to find out.

The analysis thus far has identified some clear patterns to UK historians' information-retrieval behaviour. They employ a wide range of retrieval methods, but those with highest use disguise sharp differences with those that are considered most effective. Furthermore, historians have clear, if competing, priorities in the direction they would like to see on-line finding aids developed. In order to try and resolve some of these problems one needs to go

beyond broad patterns and try to understand retrieval in terms of historians' demographics, position, institution, research field, or the type of sources used. It was one of the hypotheses of this research that there would be a relationship between one or more of these factors and the way in which historians searched for sources. Moreover, analyzing these relationships would provide a more detailed and nuanced indication as to how archives might develop their information and retrieval systems.

**Demographics and Research**

At first sight the survey data appears to support relationships among a historian's demographic characteristics, position, institution, research, and retrieval methods. For example, Table 5 below indicates gender differences in historians' use of printed repository guides and government documents as retrieval methods. Here 48 per cent of female historians use printed repository guides compared to 69 per cent of male historians, whilst 30 per cent of female historians use government documents compared to 60 per cent of male historians.

Similar patterns are revealed in other areas, such as academic and institutional rank. However, the low response rate for the survey produces a high margin of error of 9.2 per cent. This margin of error puts a severe limitation on this form of analysis. Factor the margin of error into the data and many of the differences disappear altogether or are so small as to be insignificant. In other words, these patterns could simply be the result of random variations in the survey returns rather than indicate any significant pattern.

More reliable interpretations can be made when the relationship between information-seeking methods and other factors are based on a statistically valid measurement of association between the variables. In this analysis the common Chi-square tests have been used as they are appropriate for a variety of data, both nominal and ordinal, and are relatively easy to apply and understand.[43]

43 There are of course some drawbacks. Pearson Chi-square assumes there are no frequencies less than 1 and that no more than 20 per cent of the expected frequencies are less than 5. Where possible 0 values have been avoided by aggregating categories (for example combining the different lecturer grades into one). Where an expected frequency of less than 5 remains in a 2x2 tables, Yates' correlation corrected Chi-square value can be used. This is a statistical correction that improves approximation. However, given the small total sample size, the small expected frequencies, the many ties within the data, and the possibility that it is not evenly distributed, a further refinement of Chi-square called Fisher's Exact Test has been used for all 2x2 tables. Calculations were performed on SPSS for Windows or Kristopher Preacher's Interactive Chi-square Test at the University of North Carolina at Chapel Hill, available at <http://www.unc. edu/~preacher/chisq/chisq.htm>.

**Table 5: Use of Print Retrieval Methods by Gender of Respondent**

| Gender | # of Respondents | Leads in Print | Printed Bibliographies | Printed Documentary Editions | Printed Repository Guides | Newspaper Files | Govt Docs | NRA |
|---|---|---|---|---|---|---|---|---|
| Female | 33 | 32 | 25 | 13 | 16 | 15 | 10 | 15 |
| Male | 67 | 65 | 56 | 26 | 46 | 32 | 40 | 35 |
| Total | 100 | 97 | 81 | 39 | 62 | 47 | 50 | 50 |

**Table 6: Chi-Square Tests for Gender and Printed Repository Guides**

| | Value | Asymp. Sig (2-sided) | Exact Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 3.819[a] | 0.051 | |
| Fisher's Exact Test | | | 0.079 |
| N of Valid Cases | 100 | | |

[a]0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.54.

If we return to the example of gender and use of printed repository guides the raw data suggested a relationship between the two. Table 6 illustrates the results of various Chi-square tests for gender and the use of printed repository guides. The Chi-square value itself of 3.819 is not very meaningful, although generally the higher the value the more likely it is that the variables are related. The important values are those for significance, which measure probability related to the Chi-square value. Typically, a value of less than 0.05 is considered significant. We can see in Table 6 the Asymp. Sig. (2-sided) value of 0.051 and the Fisher's Exact Sig. (2-sided) value of 0.079.[44] These values are above those considered significant and this means that, contrary to initial impressions, there is no relationship between gender and the use of printed repository guides.

Chi-square tests can also check whether a significant relationship between two variables is disguising the influence of a third variable. Using this methodology all the data from the survey returns were analyzed. Print, electronic, informal, contact, and assisted retrieval methods were tested against historians' demographic characteristics, academic rank (position and experience), institutional rank (RAE rating), research topic (subject, period, and geographic area), and type of sources used in research.

There was no evidence that younger historians made greater use of electronic retrieval methods than their older colleagues, or that more experienced historians made a more discriminating use of retrieval methods. Nor does the academic rank of an individual historian or the research status of their institution have any bearing on retrieval methods. In other words, higher status did not correlate with the use of particular retrieval methods.

Perhaps most surprisingly, historians' research topics were not a determining factor in use of retrieval methods. Respondents' research topics were categorized into seven time periods, five subjects, and seven geographic areas.

44 Asymp. Sig. (2-sided) value is the significance level based on the asymptotic distribution of a test statistic. This assumes, however, that the sample size is large. When the data set is small, sparse, contains many ties, is unbalanced, or is poorly distributed, it is preferable to calculate the significance level based on the exact distribution. Hence we use the Fisher's Exact Test/ Exact Sig. (2-sided) value.

There were eighteen instances where there was a significant relationship between one of these three aspects and a retrieval method. However, sixteen of the results had 20 per cent or more of the data cells with an expected count less than five, and eleven had 50 per cent or more of the data cells with an expected count of less than five, making the results highly unreliable. Of the two remaining relationships, both were on the 20 per cent limit of data cells with an expected value of less than five, placing them on the boundary of reliability. Both of these showed a significant relationship between the research subject and the use of printed documentary editions and printed repository guides. A far larger response may have produced more reliable statistical evidence but the frequency of significant relationships between source type and retrieval methods described below suggests that research topic has only a very limited influence, if any, on historians' retrieval methods.

**Retrieval Methods and Source Type**

Of all the variables analyzed the only consistently significant relationship discovered was between retrieval method and type of source used in research.[45] At first sight this may appear an obvious association, but in the interviews no historian indicated that the type of source they used in their research influenced their retrieval methods or that they found a particular retrieval method more effective for some types of source rather than others. This would suggest that the association between source type and retrieval methods is either a subconscious one, or so pervasive as to pass without comment. The explanation for this could well lie in factors outside the scope of this survey. Historians' own research training, experience, and professional conventions are all areas that may explain the relationship between the type of source used and retrieval methods. However, knowing that there is a significant relationship between retrieval methods and source type is of limited value. The value lies in being able to relate particular source types with specific retrieval methods. By examining this aspect more specific recommendations can be made as to how on-line archival information systems could be developed.

The survey asked historians about their use of thirty-six different types of source. Combined with thirty-three different retrieval methods this produced 1,188 Chi-square test results, of which 19.8 per cent indicated a reliable, statistically significant relationship. In order to make sense of this large set of results,

45 The survey asked historians which of thirty-six types of source they used, grouped into seven different categories. These were: published, unpublished, government, digital, other analogue, artefacts and objects, and other sources. Aggregating the use of different retrieval methods and types of source used resulted in a Chi-square value of 77.446 and a significance value of 0.00004789.

**Table 7: Percentage of Significant Relationships Between Source Types and Retrieval Methods**

| Retrieval Method | Source Type | | | | | |
|---|---|---|---|---|---|---|
| | Unpublished | Published | Government | Digital | Analogue | Artefacts |
| Print | 35 | 28 | 34 | 13 | 21 | 19 |
| Electronic | 30 | 22 | 13 | 40 | 17 | 03 |
| Informal | 26 | 41 | 00 | 20 | 11 | 28 |
| Contact | 19 | 15 | 13 | 25 | 33 | 10 |
| Assisted | 08 | 06 | 10 | 01 | 00 | 13 |

source types and retrieval methods have been grouped together. The number of significant relationships between individual sources and retrieval methods within each group has then been calculated as a percentage of the total possible. For example, there are nine types of unpublished source and eight types of print retrieval method. This gives a total of seventy-two possible significant relationships. As there were twenty-five significant relationships observed, 35 per cent of unpublished sources have a significant relationship with print-based retrieval methods. These calculations are provided in Table 7 and allow comparison of the relative significance of retrieval methods by source type. Details of individual relationships between a particular retrieval method and source type have been provided in tables in Appendix C.

Interpreting these figures reveals some surprising results. Print-based retrieval methods are only the most significant overall for unpublished and government sources. Informal retrieval methods have most significant relationships with published sources and artefacts. This is surprising considering that published material is far more likely to exist in a print or electronic catalogue than unpublished material, for which informal retrieval methods only have the third highest number of significant relationships. In light of the vast volume of published material accessible by on-line catalogues, the high use of informal methods could indicate a reaction to information overload. As most historical research begins with literature reviews this is the point at which potential sources are at their most numerous and trusted advice most valuable. Given that artefacts are generally poorly served by any form of finding aid, it is less surprising that these have more numerous significant relationships with informal retrieval methods than any other source.

The other outstanding feature is the high proportion of significant relationships between electronic retrieval methods and digital sources. Indeed, there is a 15 per cent difference between electronic retrieval and the second placed contact retrieval. This is the largest difference between first and second ranked retrieval methods for any source. Of the five methods, print retrieval methods

also only have the fourth largest proportion of relationships with digital sources. This points to a greater use of electronic retrieval methods for digital sources than for any other category.

By looking at the individual significant relationships between retrieval methods and source types we can further explore historians' information-seeking patterns.

### *Print Retrieval Methods*

In examining the relationship between the use of unpublished sources and print-based retrieval methods, the majority of significant relationships are with published finding aids and repository guides. This is followed by government documents and the NRA. Given their near universal use it is not surprising that leads in print and bibliographies only have significant relationships for a couple of lesser-used sources. What this analysis also indicates is that although leads in print and bibliographies are highly used, for historians who use unpublished sources, which are at the heart of historical research, it is the traditional archival retrieval methods that are currently most significant.

For published sources, newspapers stand out as the most significant retrieval method, associated with six of the nine types of source in this category. Indeed, one of the most obvious features is the significant association newspapers have as a print-based retrieval method across the range of sources types, with the exception of digital sources. The usefulness of newspapers as a means of locating primary sources is a long-standing feature of historical research and is an extension of the effectiveness historians cite regarding leads in published, printed material. Documentary editions, published finding aids, repository guides, and the NRA all have three significant associations with published sources. This again highlights the utility of print retrieval methods, although not to the same extent as for unpublished material.

Perhaps not surprisingly print-based retrieval methods do not have a significant relationship for users of digital sources, with the exception of electronic databases. The use of electronic datasets has a significant relationship with some, but not all, print-based retrieval methods. It occurs for bibliographies, newspaper files, repository guides, and the NRA but not for leads in print, documentary editions, published finding aids, or government documents.

Unusually, works of art, art prints, buildings, and posters are all artefacts that have a significant relationship with documentary editions as a source location method. Government documents, newspapers, and repository guides also figure for users of this type of source.

It will come as no surprise to find that there is a significant relationship between government sources and their use as a retrieval method. To a lesser extent newspapers, repository guides, and the NRA are significant print-based retrieval methods.

***Electronic Retrieval Methods***

Electronic retrieval methods have a significant relationship with a wide range of source types. For users of unpublished sources, repository Web sites, bibliographic utilities, Web search engines, and ARCHON are important retrieval methods. The use of one's own institutional OPAC is also significant for historians who use accounts and ledgers and handwritten manuscripts.

For published sources the pattern is a little more fragmented. Again, use of one's own institutional OPAC is significant for users of published diaries and journals, autobiographies, and correspondence, the type of source one might expect to find in a library catalogue. Users of this type of resource also make use of other institutions' OPAC, repository Web sites, and ARCHON. This could be indicative of genre-based retrieval, whereby diaries, journals, autobiographies, and correspondence form a class of "personal testimony" material for which electronic retrieval methods, particularly OPACs, are the most effective retrieval means.

The most numerous relationships for electronic retrieval are with digital resources, but only for electronic databases and texts. For users of these two sources there is a significant relationship with all methods of electronic retrieval except for electronic databases and use of ARCHON. There are more significant relationships between digital sources and electronic retrieval methods than for other instances where source type and retrieval methods match, for example between print sources and print retrieval methods. There are two other noticeable features about the relationship between source types and electronic retrieval methods. One is the significant relationship between all three types of analogue sources (film, video, and sound) and Web search engines. This narrow association with just one type of electronic retrieval method suggests that analogue film, video, and sound sources are particularly poorly served by other electronic retrieval methods. In fact, analogue film, video, and sound users are poorly served by all classes of retrieval method with the exception of contact-based methods (phoning, writing, and e-mail). Nevertheless, the relationship with Web search engines suggests that this type of source can at least be retrieved by one electronic method, albeit a rather blunt one.

This is in contrast to users of artefacts and objects, a class of six different sources, where the only significant relationship is between photographs and Web search engines. For users of government sources the only significant relationships are between bills and acts, and Web search engines and ARCHON, and between correspondence and ARCHON. The overriding impression from examining source types with electronic retrieval methods, is that the more specialized the resource, the more rapidly the significance of this type of retrieval diminishes. There is, however, a significant and widespread correlation with electronic databases and texts.

### *Contact Retrieval Methods*

The next category of retrieval methods covers activities where the historian is either visiting the archive, or contacting it by telephone, writing, or e-mail. What is perhaps more important here is not the means of contact but the type of retrieval method used under each of these categories. For example, for retrieving unpublished minutes there is a significant relationship with visiting an archive for assistance, telephoning for assistance, and writing for assistance. Through the fog of statistics this would seem to be a plaintive cry from historians for some help with minutes, though not so desperate for them to resort to e-mail. This pattern is repeated for retrieval of correspondence, with users also resorting to in-house print and electronic finding aids. What these types of source have in common is that the evidence historians are seeking is likely buried in long series of files, often described in finding aids only by the dates of each volume or a brief title. This would seem to be a clear case where more detailed descriptions would greatly enhance historians' research.

That there are no similar relationships for government minutes would perhaps indicate they are a somewhat more accessible source for historians. And for digital sources there are only significant relationships with phoning for a copy of finding aids and e-mailing for a copy of documents.

There are also significant relationships between diaries and journals, accounts and ledgers, wills, reports and manuscripts, and either using in-house finding aids or requesting a copy of them. This suggests that for users of this type of source the key issue is the availability of the relevant finding aid.

This pattern would support historians' desire to see archives prioritize the retrospective conversion of finding aids indicated in both the survey and interviews. Here though, we come across a familiar contradiction. There is on the one hand a demand for more detailed finding aid descriptions of unpublished minutes, yet on the other hand a desire for more on-line finding aids for diaries, journals, accounts, ledgers, wills, reports, and manuscripts. This mirrors the even split (37%) between interviewees who would prioritize retrospective conversion and greater detail in finding aids. Given the constraints on archival resources what is not clear from this analysis is the alternative they would choose if historians could have either greater detail or more finding aids on-line. The only way forward that suggests itself is that for collections of unpublished minutes greater emphasis is placed on detailed descriptions, otherwise efforts should be concentrated on retrospective conversion. This of course presumes that academic historians' interests are of primary concern.

For unpublished sources there are significant relationships between newspapers and requests for copies of the source (whether by telephone, writing, or e-mail) as well as assistance. Given the significance newspapers have as a means of locating other types of sources, a strong case for prioritizing the digitization of newspapers, or linking finding aids to already digitized newspaper

collections, could be made. There is also a significant relationship between correspondence, pamphlets, flyers and treatises, and using in-house finding aids or requesting a copy of a finding aid. This again supports historians' desire to see more finding aids available on-line.

In terms of digital sources there is a significant relationship between digital video and requesting a copy of finding aids by telephone, writing, and e-mail. Given the absence of a significant relationship between digital video and any other retrieval method, this would suggest that this type of source is not accessible through either print or electronic retrieval methods. There are also significant relationships between electronic texts and digital images and requesting a copy of the sources. This might reflect a perhaps not unsurprising, if not necessarily realistic, expectation that copies of such sources should be available.

### *Informal and Assisted Retrieval Methods*

The final category of retrieval methods covers informal means (browsing, serendipity, asking colleagues) and those involving a request for assistance from an archivist or employing a research assistant. For unpublished sources there are significant relationships between browsing stacks and the use of minutes, reports, and correspondence. There is also a significant relationship between serendipity and the use of wills, reports, and correspondence. Lastly, there is a significant relationship between asking colleagues and the use of correspondence. This means there are significant relationships between correspondence and all three informal retrieval methods. Given that there are also significant relationships between correspondence and various assisted retrieval methods, this would further suggest that correspondence is not well served by more common print or electronic archival retrieval methods.

Given that published sources are generally far better catalogued, it is surprising to find even more significant relationships between sources in this category. Where there is a total of seven such relationships for nine types of unpublished sources, there is eleven for the nine types of unpublished sources. Once again correspondence has a significant relationship with all three types of informal retrieval method. There are no significant relationships for government sources and few for digital or other analogue sources.

For artefacts and objects there are five significant relationships, with serendipity being the most common. For retrieval methods that use some form of research assistance there are only seven significant relationships across all source types, but three of these occur for artefacts and objects. This perhaps reflects the more specialized nature of these sources.

## Range of Retrieval Methods

There is one last area where significant relationships were found. This was

between types of source and the number of retrieval strategies used. The survey asked historians which of eight retrieval strategies they used for the six categories of source, the results of which are reproduced in Table 8.[46]

The overall pattern is one where the number of retrieval strategies used declines, the less voluminous and more specialized the source type. For example, there are twelve historians who use five different retrieval methods for unpublished sources, three for government sources, and none for artefacts and objects. In other words, the more sources of a particular type there are, and the more historians there are who use them, the greater the number of retrieval methods used. Therefore, we see the widest number of retrieval methods being used for unpublished, published and government sources, where historians use the full range between one and eight, and the least number for artefacts and objects. There is, however, a small band of determined historians who use every method at their disposal irrespective of the type of source.

In most cases historians use between one and three retrieval strategies for all source types, for example a combination of print, on-line, and visit methods. The outstanding exception is electronic or digital sources, where 55 per cent of historians who use this type of source only use one retrieval strategy. Furthermore, all of these twenty-two historians use an on-line strategy and thirty-nine of the forty (97.5%) use an on-line strategy in combination with one or more other methods. This supports the large number of significant relationships between digital and electronic sources and electronic retrieval methods revealed in the source type analysis above.

The implications of historians' desire for more on-line finding aids and digital sources are clear. The more digital surrogates are available via on-line retrieval the more historians who use this type of source will concentrate on this retrieval method. This is a potentially powerful combination that highlights how combined on-line access and digital resources could dramatically enhance the efficiency with which many historians locate primary sources. This is a compelling synergy that suggests that for archives to maximize their return in developing on-line finding aids, a complementary body of digital sources needs to be created.

**Where Next for On-line Finding Aids?**

Reading the above analysis many archivists can look at their recent endeavours with some satisfaction. Considering that on-line archival finding aids lag behind comparable library developments there is cause for optimism in histo-

46 These categories were: print, on-line, visit, telephone, write, e-mail, informal, and research assistance. These relationships produced a Chi-square value of 51.993 and a p-value of 0.00000566. As there were a large number of values less than 5 for use of four or more retrieval methods, the values between 4 and 8 were aggregated for the Chi-square analysis.

**Table 8: Number of Retrieval Methods Used by Type of Source**

| Number of Retrieval Methods Used | Unpublished | Published | Government | Electronic or Digital | Sound, Film, or Video | Artefacts & Objects |
|---|---|---|---|---|---|---|
| One | 16 | 15 | 16 | 22 | 6 | 5 |
| Two | 11 | 23 | 20 | 4 | 4 | 9 |
| Three | 16 | 22 | 18 | 8 | 5 | 6 |
| Four | 12 | 14 | 5 | 3 | 1 | 0 |
| Five | 12 | 5 | 3 | 0 | 0 | 0 |
| Six | 7 | 1 | 1 | 0 | 0 | 0 |
| Seven | 7 | 5 | 2 | 0 | 1 | 0 |
| Eight | 5 | 6 | 4 | 3 | 2 | 2 |

rians' use of a range of electronic finding aids. Both repository Web sites and ARCHON are used to locate a variety of source material. Certainly historians appear willing to use electronic retrieval methods. Thirty per cent of historians surveyed used five or six of the electronic retrieval methods presented to them in the survey and 72 per cent of them had used at least one form of archival electronic finding aid. Only 13 per cent of respondents did not use any form of electronic finding aid at all.

Despite these encouraging trends there are causes for concern regarding the current state of on-line archival finding aids. Producing new on-line finding aids is a resource-intensive exercise, let alone undertaking a significant program of retro-conversion. Add to this historians' desire for item-level description – not something archives have produced to any great extent in print – and the associated benefits of digitization, and it is obvious that without additional resources or more efficient ways of producing finding aids (or at least more effective ways of searching on-line finding aids), the potential benefits will not be realized. The number, completeness, and accuracy of on-line finding aids will undoubtedly improve with time, but an immediate dialogue needs to be established between archivists and historians if the reality is not to lag terminally behind expectations.

Certainly more research and collaboration between archivists and historians needs to take place to understand in more detail the level and type of description required and priorities for retro-conversion and digitization. Ultimately these discussions will need to take place at the level of individual repositories, regarding specific collections, and with other user groups in addition to academic historians.

As this article suggested at the outset, it is not just desirable but essential that on-line archival finding aids reflect historians' information-seeking behaviour, and that of other users. Given all that has been said above, how might this be achieved? We can summarize historians' information-seeking behaviour as characterized by the use of a diverse range of retrieval methods, but a preference for one or two "core" effective retrieval methods from a range of print, electronic, and informal methods. These are supplemented by a variety of "compensatory" retrieval methods. These compensatory methods make up for deficiencies in core methods and may be either one of the other core methods that is not the most effective for that historian, or a contact or assisted method. The use of both core and compensatory methods appear to be primarily determined by the type of sources the historian uses for research.

Taking this behaviour into account it is clear that finding aids are too few and too brief, whether in print or electronic format. Part of the problem arises because finding aids were never designed for remote, high-level retrieval, either in the print or on-line worlds. They were designed as in-house aids to be used in conjunction with the knowledge and insight of the archivist. The context of use was as important to successful retrieval as the finding aid itself. To

simply retro-convert print finding aids or create new ones in their likeness and place them all in an electronic environment is not necessarily an effective or efficient strategy. We now need to develop on-line archival systems that are part finding aid, part expert system, and part intelligent agent able to conceptualize, mediate, and tailor the information provided. It may take something of a leap in imagination, but it is not impossible to visualize a system that has such features.

Perhaps the closest example we have to such a system is Amazon, the on-line retailer of books, CDs, and other items.[47] When viewing a particular title, one is able to see what other titles people who purchased that title bought, readers are able to post their own reviews alongside those from Amazon and rate the title with a simple star system. For many titles, detailed pages of contents, sample chapters, or individual pages are available. Here the on-line retail system is seeking to replicate the purchasing behaviour in a bookshop. We are unlikely just to locate the title and proceed to the checkout. We browse related titles on the shelf, we look at the reviews on the dust jacket, check through the table of contents, and often skim a few pages to make sure the book meets our expectations. If we are unsure of what we want or need a second opinion, we may well ask the advice of a member of the staff.

Many of these features could be translated into an on-line archival system. Archivists and users could add ratings and comments to items or series, stating how useful or otherwise they were and for what purpose. Links to related entries that other users consulted could be provided. As we are never likely to be able to digitize all our collections it would be useful to provide digitized samples of material to show users the type of information the sources contained. Such a system could also enable pre-ordering of material, reprographics, or context-sensitive help.

A dynamic system such as this could be harnessed in other ways. As archives are unlikely to have the resources to provide item-level descriptions, more imaginative ways need to be sought to populate finding aids. Friends' organizations, volunteers, students, and other experienced users are in an ideal position to do so. They often have a detailed and intimate knowledge of sources and could select descriptive terms from a pre-defined controlled vocabulary as well as a free prose commentary. This could leave archival staff to oversee quality control, editing, and system development.

In an ideal world we can imagine that an on-line archival system would offer the following functionality:

- Complete on-line finding aids for all collections;
- Detailed item-level descriptions;
- Context for source creation, provenance, and research use;

47 See <http://www.amazon.com>.

- Finding aid links to related bibliographies;
- Finding aid links to digital samples of sources;
- Context-specific help;
- Cross-walks for source type as well as period, place, personal, and corporate names;
- Logging of user browsing, searches, and retrievals by intelligent agents;
- On-line ordering for digital surrogates;
- Pre-ordering for analogue materials;
- Rating of sources;
- Comments on sources;
- User inputted descriptions;
- Finding aids represented according to user profiles.

Of these features, it is those that emulate the context and mediation provided by leads in print and informal methods that are particularly important. Of course, each of these features poses its own technical, practical, and resource problems. It is also difficult to visualize what such a system would look like and how it would operate.[48] Nevertheless, some of these features already exist in on-line archival systems, even if they are under-exploited. Furthermore, archivists can harness the investments already made, whether in XML or database content management systems. Any one or a combination of these technologies can be used to develop a dynamic, interactive, and responsive on-line archival system. It may never be possible to develop all of the features described above, but elements can be added to existing systems or incorporated in future developments. Such a system may never replace historians' faith in leads in print, serendipity, or visiting an archive, but it would go a long way to emulating it.

In the shorter term and with the technology and resources available today, it should still be possible for archives to take steps to accommodate historians' information-seeking behaviour. We already know that historians have competing priorities in the creation of more on-line finding aids, more detailed finding aids, and more digital surrogates. Based on the analysis above a number of recommendations present themselves. In terms of providing more on-line finding aids the priority should be minutes, reports, and correspondence as there is a significant relationship with browsing for these sources. The strong relationship between contacting archives and minutes and correspondence would suggest that this would be a fruitful area on which to concentrate efforts to provide more detailed finding aids. Given the significance attributed to using newspapers across the range of source types, archives that were able to concentrate their digitization efforts on them, or link to already digitized col-

48 In the near future this project hopes to develop the architecture of such a system, provisionally called Arcright, to explore its technical feasibility and functionality.

lections, would vastly enhance historians' ability to undertake "joined up" research on-line. Lastly, if archives were able to establish bibliographies related to each of their collections they would start to provide some of the all important context and mediation that are the key features of historians' retrieval behaviour.

Ultimately, historians are serving themselves as much as being served. Nevertheless, they are willing and able to make use of on-line retrieval, even if they have reservations; for some it is a highly effective retrieval method. Their information-seeking behaviour may be complex, but the significant association with types of source, their preference for retrieval methods that provide research context and peer-reviewed mediation, and their desire to see more on-line finding aids with greater levels of detail and associated digitized sources, provide clear indications as to how on-line finding aids can be developed in the interim to meet these needs.

## Appendix A

## RAE Ratings

| Rating | Description |
|---|---|
| 5* | Quality that equates to attainable levels of international excellence in more than half of the research activity submitted and attainable levels of national excellence in the remainder. |
| 5 | Quality that equates to attainable levels of international excellence in up to half of the research activity submitted and to attainable levels of national excellence in virtually all of the remainder. |
| 4 | Quality that equates to attainable levels of national excellence in virtually all of the research activity submitted, showing some evidence of international excellence. |
| 3a | Quality that equates to attainable levels of national excellence in over two-thirds of the research activity submitted, possibly showing evidence of international excellence. |
| 3b | Quality that equates to attainable levels of national excellence in more than half of the research activity submitted. |
| 2 | Quality that equates to attainable levels of national excellence in up to half of the research activity submitted. |
| 1 | Quality that equates to attainable levels of national excellence in none, or virtually none, of the research activity submitted. |

**Appendix B**

**Historians and the Search for Primary Source Materials**
**Historians' Survey**
***The basic premise behind this study is that information systems should be built around user information needs and behaviours. Working within this framework, the specific goals of this survey and the larger research project are to discover how historians are searching for and locating primary source materials; how they are teaching/advising their students to do so; and how archivists and other cultural heritage curators can best facilitate such information discovery. Thank you for your time, effort, and your disciplinary perspective that is critical to this project.***

**A. Professional Data.**

1. Please check the title(s) that best represents your current rank:
   ____ Dean, or dept. Head
   ____ Personnel or Chaired Prof.
   ____ Professor
   ____ Principal Lecturer
   ____ Senior Lecturer
   ____ Lecturer (permanent)
   ____ Lecturer (fixed-term)
   ____ Other: _____
2. Gender:
   _____male _____female
3. Number of years teaching history at a college or university: _____
4. Number of years teaching history at your current institution: _____
5. Primary courses you teach:
6. Primary area(s) of research:

**B. Research.**

1. Please provide the following information for your current or last research project in which you needed to locate primary source materials (i.e., you did not start the project knowing where all/most of the relevant materials were located from the outset):
2. Topic of research:
3. Chronological period: _____
4. Start date of Research: _____
   End date of Research: _____

***Main archives, special collections and repositories used in this research:***

**C. Primary Sources.**

5. Please indicate which types of primary documentation you used in the research you just described (check all that apply in the "used" column). Please specify "other" entries. Of the documentation types you used, rank the three most important in the "rank" column, 1 = most important.

| **Primary Document Type** | **Used** | **Rank** |
|---|---|---|
| **Unpublished Material** | | |
| Minutes | | |
| Diaries or Journals | | |
| Accounts and Ledgers | | |
| Wills | | |
| Reports | | |
| Correspondence | | |
| Handwritten Manuscripts | | |
| Typed Manuscripts | | |
| Maps and Plans | | |
| Other: | | |
| Other: | | |
| **Published Material** | | |
| Diaries or Journals | | |
| Autobiographies | | |
| Correspondence | | |
| Pamphlets | | |
| Flyers | | |
| Treatises | | |
| Catalogues | | |
| Maps and Plans | | |
| Newspapers | | |
| Other: | | |
| Other: | | |
| **Government Material** | | |
| Papers and Reports | | |
| Bills and Acts | | |
| Minutes | | |
| Correspondence | | |
| Other: | | |
| Other: | | |
| **Digital Material** | | |
| Electronic Databases | | |
| Electronic Texts | | |
| Digitized Images | | |
| Digitized Moving Images | | |
| Digitized Sounds | | |
| Other: | | |
| **Other Analogue Material** | | |
| Sound Recordings | | |
| Film Recordings | | |
| Video Recordings | | |
| Other: | | |
| **Artefacts and Objects** | | |
| Photographs (print or negative) | | |
| Works of Art | | |
| Art Prints | | |
| Glass, Ceramics, Pottery | | |
| Buildings | | |
| Posters | | |
| Other: | | |
| **Other Material** (specify) | | |
| | | |
| | | |
| | | |

**D. Searching for Primary Materials**
(Check all that apply for questions 7–14).

7. Print Search: In your print searches, did you …
   ____ Follow leads (footnotes, bibliographies, textual references) that I found in books and articles.
   ____ Search printed bibliographies (e.g., topical bibliography related to my subject, event, or personality).
   ____ Consult published documentary editions (e.g., *Select Documents of English Constitutional History, 1307–1485*).
   ____ Search published finding aids of specific archival collections (e.g., *A Guide To Dean Of Guild Court Records*).
   ____ Search repository guides/indexes (e.g., *Directory of Corporate Archives*).
   ____ Search newspaper files.
   ____ Use national, regional, or local government documents (e.g., census files, government statistics, parliamentary papers and reports, etc.) to locate other primary source material.
   ____ Search the National Register of Archives (NRA).
8. On-line Search: In your on-line searches, did you…
   ____ Search your institution's on-line library catalogue (in the library or remotely) to find locally held archival materials.
   ____ Search the on-line catalogues from other institutions through the Web to find materials in their archives and manuscript repositories.
   ____ Search national bibliographic databases such as BIDS, BLPC, or COPAC.
   ____ Go directly to the Web sites of repositories that you believed might hold relevant primary materials and searched these sites for on-line finding aids.
   ____ Search the Web using a search engine such as Alta Vista or Lycos to locate relevant finding aids and collections.
   ____ Search the ARCHON gateway at the Historic Manuscripts Commission.
9. Visits: In your visits, did you…
   ____ Visit an archival/manuscript repository/special collection to use its in-house (printed) finding aids to locate relevant materials within the collection.
   ____ Visit an archival/manuscript repository/special collection to use its in-house (electronic) finding aids to locate relevant materials within the collection.
   ____ Visit an archival/manuscript repository/special collection to obtain assistance from an archivist/curator to locate materials at that institution or at other repositories.

10. Telephone: In your telephone contacts, did you…
    ____ Ask for remote assistance to locate relevant materials.
    ____ Request a copy of a finding aid(s).
    ____ Request a copy of primary materials.
11. Writing: In your written correspondence, did you…
    ____ Ask for remote assistance to locate relevant materials.
    ____ Request a copy of a finding aid(s).
    ____ Request a copy of primary materials.
12. E-mail: In your e-mail correspondence, did you…
    ____ Ask for remote assistance to locate relevant materials.
    ____ Request a copy of a finding aid(s).
    ____ Request a copy of primary materials.
13. Informal: In your informal searching, did you…
    ____ Ask colleagues.
    ____ Follow serendipitous leads (e.g., not from expected sources such as colleagues in topical area).
    ____ Browse library stacks.
14. Research Assistance: Did you…
    ____ Use an archive/repository/special collections member of staff to locate primary source material.
    ____ Use in-house research assistance to locate primary source material.
    ____ Use a freelance/external research assistant to locate primary source material.
    ___ Ask a reference librarian (not an archivist/special collections librarian) for search assistance.
15. Are there other means you used to find primary source materials not listed above? If so, please describe:

16. Please indicate how you went about finding these sources. Check all that apply:

| Primary Document | Print Search | On-line Search | Visit | Phone | Write | E-mail | Informal | Research Assistance |
|---|---|---|---|---|---|---|---|---|
| Unpublished Material | | | | | | | | |
| Published Material | | | | | | | | |
| Government Material | | | | | | | | |
| Electronic Material | | | | | | | | |
| Other Analogue Material | | | | | | | | |
| Artifacts and Objects | | | | | | | | |
| Other Material | | | | | | | | |

17. I have used Encoded Archival Description (EAD) finding aids on-line:

____Yes ____No ____Not sure

18. How could archives and other cultural heritage repositories better serve your information needs?

Thank you for your participation.
Again, your participation and responses are entirely confidential. If you have questions about the content of this survey I can be reached at 0141 330 3843 or at I.Anderson@hatii.arts.gla.ac.uk
Please return your completed survey in the enclosed envelope to:
Dr. Ian G. Anderson
Humanities Advanced Technology and Information Institute
George Service House
11 University Gardens
University of Glasgow
Glasgow, G12 8QQ

**Appendix C**
**Print Retrieval Methods by Type of Source where there is a Statistically Significant Relationship**

| | Print-Based Retrieval Methods | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Type of Source** | **Leads in Books** | **Bibliographies** | **Documentary Editions** | **Published Finding Aids** | **Repository Guides** | **Newspaper Files** | **Govt Documents** | **NRA** |
| **Unpublished Sources** | | | | | | | | |
| Minutes | | | | X | X | | X | |
| Diaries/Journals | | X | | X | X | | | X |
| Accounts/Ledgers | | | | X | | | | |
| Wills | | | | X | X | | | X |
| Reports | | | | X | | X | X | |
| Correspondence | | | | | X | X | X | X |
| Handwritten MSS | X | | | X | X | | | X |
| Typed MSS | | | | | | X | X | |
| Maps and Plans | | | X | | | | | |
| **Published Sources** | | | | | | | | |
| Diaries/Journals | | | | | X | X | | X |
| Autobiographies | | | | | | X | | |
| Correspondence | | | | X | X | X | | X |
| Pamphlets | X | | | | | X | | |
| Flyers | | | | | | X | | |
| Treatises | | | X | | | | | |
| Catalogues | | | X | X | | | | |
| Maps and Plans | | | X | X | | | | |
| Newspapers | | | | | X | X | X | X |

**Print Retrieval Methods by Type of Source where there is a Statistically Significant Relationship (*concluded*)**

| | Print-Based Retrieval Methods | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Type of Source** | **Leads in Books** | **Bibliographies** | **Documentary Editions** | **Published Finding Aids** | **Repository Guides** | **Newspaper Files** | **Govt Documents** | **NRA** |
| **Government Sources** | | | | | | | | |
| Papers & Reports | | | | | | X | X | |
| Bills and Acts | | | | | X | | X | X |
| Minutes | | | | | | X | X | |
| Correspondence | | | | | X | X | X | X |
| **Digital Sources** | | | | | | | | |
| Electronic Databases | | X | | | X | X | | X |
| Electronic Texts | | | | | | | | X |
| Digital Images | | | | | | | | |
| Digital Video | | | | | | | | |
| Digital Sound | | | | | | | | |
| **Other Analogue Sources** | | | | | | | | |
| Sound | | | | | | X | | |
| Film | | | X | | | X | X | |
| Video | | | | | | X | | |
| **Artefacts and Objects** | | | | | | | | |
| Photographs | | | | | | X | X | |
| Works of Art | | | X | | | | | |
| Art Prints | | | X | | | X | | |
| Glass, Ceramics, and Pottery | | | | | | | | |
| Buildings | | | X | X | | | X | |
| Posters | | | X | | | | | |

**Electronic Retrieval Methods by Type of Source where there is a Statistically Significant Relationship**

| | Electronic Retrieval Methods | | | | | |
|---|---|---|---|---|---|---|
| **Type of Source** | **Own OPAC** | **Other OPAC** | **Bibliographic Utilities** | **Repository Web sites** | **Web Search Engines** | **ARCHON** |
| **Unpublished Sources** | | | | | | |
| Minutes | | | | X | | |
| Diaries/Journals | | | X | X | | X |
| Accounts/Ledgers | X | | | | X | X |
| Wills | | | | | | X |
| Reports | | | X | X | | |
| Correspondence | | | | X | X | |
| Handwritten MSS | X | | | X | | |
| Typed MSS | | | | | X | |
| Maps/Plans | | | X | | | |
| **Published Sources** | | | | | | |
| Diaries/Journals | X | X | | X | | X |
| Autobiographies | X | | | | | |
| Correspondence | X | | | | | |
| Pamphlets | | | | | | |
| Flyers | | | | X | | |
| Treatises | | | | | | X |
| Catalogues | | | | | | |
| Maps/Plans | | | X | | | |
| Newspapers | | | X | X | X | |
| **Government Sources** | | | | | | |
| Papers & Reports | | | | | | |
| Bills and Acts | | | | | X | X |
| Minutes | | | | | | |
| Correspondence | | | | | | X |
| **Digital Sources** | | | | | | |
| Electronic Databases | X | X | X | X | X | |
| Electronic Texts | X | X | X | X | X | X |
| Digital Images | | | | | | X |
| Digital Video | | | | | | |
| Digital Sound | | | | | | |
| **Other Analogue Sources** | | | | | | |
| Sound | | | | | X | |
| Film | | | | | X | |
| Video | | | | | X | |
| Artefacts and Objects | | | | | | |
| Photographs | | | | | X | |
| Works of Art | | | | | | |
| Art Prints | | | | | | |
| Glass, Ceramics, and Pottery | | | | | | |
| Buildings | | | | | | |
| Posters | | | | | | |

## Contact Retrieval Methods by Type of Source where there is a Statistically Significant Relationship

| | Visit For | | | Phone For | | | Write For | | | E-mail For | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Type of Source** | **Print Finding Aids** | **Elec. Finding Aids** | **Assistance** | **Copy of Finding Aids** | **Copy of Sources** | **Assistance** | **Copy of Finding Aids** | **Copy of Sources** | **Assistance** | **Copy of Finding Aids** | **Copy of Sources** | **Assistance** |
| **Unpublished Sources** | | | | | | | | | | | | |
| Minutes | | | X | | | X | | | X | | | |
| Diaries/Journals | | X | | | | | X | | | X | | |
| Accounts/Ledgers | | | | | | | | | | X | | |
| Wills | | X | | | | | X | X | | | | |
| Reports | | | | X | | X | | | | | | |
| Correspondence | X | X | X | | | X | | | X | | | |
| Handwritten MSS | X | | | | | | | | | | | |
| Typed MSS | X | | | X | | | | | | | | |
| Maps and Plans | | | | | | | | | | | | |
| **Published Sources** | | | | | | | | | | | | |
| Diaries/Journals | | | | | | | | | | | | |
| Autobiographies | | | | | | | | | | | | |
| Correspondence | X | X | | | | | | | | | | |
| Pamphlets | | X | | | | | | | | | | |
| Flyers | | X | X | X | | | | | | | X | |
| Treatises | | | | X | | | X | | | | | |
| Catalogues | | | X | | | | | | | | | |
| Maps and Plans | | | X | | | | | | | | | |
| Newspapers | | | | | X | X | | X | X | | X | |
| **Government Sources** | | | | | | | | | | | | |
| Papers & Reports | | | | | | X | | | | | | |
| Bills and Acts | | | | | | | X | X | | X | | |
| Minutes | | | | | | | | | | | | |
| Correspondence | | | | | X | X | | | | | | |

**Contact Retrieval Methods by Type of Source where there is a Statistically Significant Relationship (*concluded*)**

| | Visit For | | | Phone For | | | Write For | | | E-mail For | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Type of Source** | **Print Finding Aids** | **Elec. Finding Aids** | **Assistance** | **Copy of Finding Aids** | **Copy of Sources** | **Assistance** | **Copy of Finding Aids** | **Copy of Sources** | **Assistance** | **Copy of Finding Aids** | **Copy of Sources** | **Assistance** |
| **Digital Sources** | | | | | | | | | | | | |
| Electronic Data-bases | | | | X | | | | | | | X | |
| Electronic Texts | | X | | X | X | | X | X | | | X | X |
| Digital Images | | X | | | | | | X | | | X | |
| Digital Video | | | | X | | | X | | | X | | |
| Digital Sound | | | | | | | | | | | | |
| **Other Analogue Sources** | | | | | | | | | | | | |
| Sound | | | | X | X | X | X | | | | X | |
| Film | | | X | | X | | | | | | | |
| Video | | | | X | X | | X | | | X | X | |
| **Artefacts and Objects** | | | | | | | | | | | | |
| Photographs | | | | | | | | | | | | |
| Works of Art | | | | | | | | | | | | |
| Art Prints | | | | | | | | | | | | |
| Glass, Ceramics, and Pottery | | | | | | | | X | | | | |
| Buildings | | X | X | | X | | | X | | | | X |
| Posters | | | | X | | | | | | | | |

**Informal and Assisted Retrieval Methods by Type of Source where there is a Statistically Significant Relationship**

| | Informal Methods | | | Research Assistance Methods | | | |
|---|---|---|---|---|---|---|---|
| **Type of Source** | **Ask Colleague** | **Serendipity** | **Browse Stacks** | **Use Archive Staff** | **Use Own Research Assistant** | **Use External Research Assistant** | **Ask Reference Librarian** |
| **Unpublished Sources** | | | | | | | |
| Minutes | | | X | | | | |
| Diaries/Journals | | | | | | | |
| Accounts/Ledgers | | | | | | | |
| Wills | | X | | | | X | |
| Reports | | X | X | | | | |
| Correspondence | X | X | X | X | | | |
| Handwritten MSS | | | | | | | X |
| Typed MSS | | | | | | | |
| Maps/Plans | | | | | | | |
| **Published Sources** | | | | | | | |
| Diaries/Journals | | | | | | | |
| Autobiographies | X | | | | | | |
| Correspondence | X | X | X | | | | |
| Pamphlets | X | X | | X | | | |
| Flyers | | | | | | | |
| Treatises | | | | | | | |
| Catalogues | | X | X | | X | | |
| Maps/Plans | | X | | | | | |
| Newspapers | X | | X | | | | |
| **Government Sources** | | | | | | | |
| Papers & Reports | | | | | | | |
| Bills and Acts | | | | | | | |
| Minutes | | | | | | | |
| Correspondence | | | | | | | |

**Informal and Assisted Retrieval Methods by Type of Source where there is a Statistically Significant Relationship (*concluded*)**

| | Informal Methods | | | Research Assistance Methods | | | |
|---|---|---|---|---|---|---|---|
| **Type of Source** | **Ask Colleague** | **Serendipity** | **Browse Stacks** | **Use Archive Staff** | **Use Own Research Assistant** | **Use External Research Assistant** | **Ask Reference Librarian** |
| **Digital Sources** | | | | | | | |
| Electronic Databases | | X | | | | | X |
| Electronic Texts | X | X | | | | | |
| Digital Images | | | | | | | |
| Digital Video | | | | | | | |
| Digital Sound | | | | | | | |
| **Other Analogue Sources** | | | | | | | |
| Sound | | | | | | | |
| Film | | | | | | | |
| Video | | X | | | | | |
| **Artefacts and Objects** | | | | | | | |
| Photographs | | | | | | | |
| Works of Art | | X | | | | | |
| Art Prints | | | | | | | |
| Glass, Ceramics, and Pottery | | | | | | X | |
| Buildings | X | X | X | | X | | X |
| Posters | | X | | | | | |