

Fifty Years of Information Behavior Research

by T.D. Wilson

Special Section

When I was asked to write about 50 years of information behavior research, I initially quailed, partly because I had written a similarly titled piece 15 years ago [1] and was reluctant to go over the same ground again and partly because finding a way through the volume of material is not exactly a trivial task. However, a smaller piece than the previous was required, and I finally agreed. I have tried to draw attention to investigations which, I believe, any researcher new to the field ought to be aware of. Inevitably, because of my background, there is something of a UK bias in this report, but sometimes this inclination is justified by the fact that major, nationwide studies were carried out in the United Kingdom, which were not replicated elsewhere. I hope the reader will find any bias irrelevant to the overall picture.

What did the library and information research world look like in 1959? Very different from today, certainly. Although the computer had been invented some time previously, it was not in general use for the handling of information. In fact, in that year, I was running an information unit in the nuclear energy industry and, knowing of the early work on computer-based indexes, I visited the computer services division and talked to them about a possible replacement for the optical coincidence card system I was using. (This employment, in itself, was novel: that system was only the third such in the United Kingdom at the time.) The computer manager came along to my office to see the system in use and, after a demonstration, looked thoughtfully into the big box containing the cards, shook his head and said, “No, we couldn’t do any better than that!”

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Over the past 50 years the computer scientists have certainly discovered how to do better, and today, information retrieval without the computer is almost inconceivable. Clearly, the widespread use of computers and, more recently, the development of the Internet and the World Wide Web have completely transformed the way information is handled in many disciplines and how many ordinary people, as well as scholars and researchers, now think of gathering information.

The Prehistoric Era

Technology is not the only driver of research, however, although we may think of it as the most significant; other environmental factors also affect our view of what problems are important and what methods we should employ to investigate them. It may be useful, therefore, to review the past 50 years in these terms, particularly as others will focus upon other aspects of the research.

If we look back to the era before 1959 and indeed for a time after that, two factors appear to dominate in the history of what we now call information behavior. The first was related to the link between public support and funding for libraries. The need for public libraries in the United States to build public support to ensure that funds were provided through local taxation drove the library surveys of the pre-World War II era. As McDiarmid [2] puts it:

In order to answer the question, “What type of library service is needed in the community?... a great deal must be known regarding the area to be served. What are the important factors in the library’s community environment? What social changes have altered this environment? These are questions which require historical, geographical and social data and, hence, an important part of an effective library survey is a study of the community itself. (p. 11)

The consequence of this approach was that users were discussed generically, as members of particular occupations or ethnic groups, as in the Westchester study [3], or as members of significant groups in the community. For example, Quigley & Marcus [4] reported on membership of the College Woman's Club, *Who's Who in America* and "other key people," including teachers and ministers of religion. Studies of how individual users behaved in relation to libraries appear to be lacking in this era.

It seems curious that this concern with the make-up of the community served by a library or information service appears to have disappeared from the research literature. In a related area, the Pew Internet and American Life projects present a demographic picture of Internet use in their various reports (for example the reports on *Networked Families* [5] and *Degrees of Access* [6]) and perhaps it is time that information use was explored in a similar way.

The second major factor in the era before 1959 was World War II and this for several reasons. First, the amount of scientific and technological research increased enormously as both sides sought to improve their war machines, and there was a consequent production of large numbers of scientific reports. Most of these reports were of restricted access but, nonetheless, the organizations concerned (particularly governmental organizations) had to manage them. Secondly, at the end of the war vast amounts of scientific and technological documentation were made available, especially the material produced in Germany and made available to Allied researchers after the war. These two factors constituted a significant part of the *information explosion*, which was the subject of much debate. The term is used today to describe the explosion of information following the introduction of the World Wide Web, but it originates in the 1960s, by which time, not only was much of the former secret information in wider circulation, but the various programs for the peaceful uses of atomic energy were also generating enormous amounts of research and consequent publication, and there was growth in research and development spending in other industry sectors.

Towards the end of this era a significant event took place in London, the Royal Society Scientific Information Conference of 1948. The aim of the conference was set out in a report of an earlier conference, the Royal

Society Empire Scientific Conference of 1946 [7], which asked the following of the society:

...to convene a conference of the libraries, societies and institutions responsible for publishing, abstracting and information services, in order to examine the possibility of improvement in existing methods of collection, indexing and distribution of scientific literature, and for the extension of existing abstracting services. (p. 11)

Given the theme of the conference, it is not surprising, perhaps, that little attention was given to information use; however, one paper on the subject still deserves our attention. This exception was Professor J.D. Bernal's paper, *Preliminary analysis of pilot questionnaire on the use of scientific literature* [8], which may well be the earliest published paper in the area of information use. It is remarkable that a major scientist, a crystallographer and physicist (and probably one of the most outstanding scientists never to have won the Nobel prize – although a number of his students and associates did) should find the time not only to carry out this work but also contribute another paper to the conference, as well as editing the initial notes and playing a full part in discussions. The paper itself has now become outdated because of developments in technology, but the methods employed and the questions asked could well be adapted for a comparative study, 50 years on.

1959 to 1979

In the context of the pre-history of information behavior research, we can see that 1959 was something of a watershed. Nowhere is this clearer than in the papers presented at the International Conference on Scientific Information [9], which was planned as a follow-up to the 1948 conference. The contents list of the *Proceedings* reveals that, by this date, how information was sought and used was on the research agenda. Indeed Area 1 of the conference was devoted to "Literature and reference needs of scientists: Knowledge now available and methods of ascertaining requirements." The 13 papers under this heading constitute the first significant compilation of research results in what came to be known as "user studies."

Given the nature of the conference, it is not surprising that scientists and technologists were the focus of interest. The geographical distribution of the authors, the methods employed and the objectives of the research are of interest, however. One might expect, given the location of the conference – Washington, DC – that there would be a preponderance of papers from the United States. This was not the case: There were six papers from the United States and seven from Europe (the United Kingdom, with five papers dominated the European contribution). This international approach suggests that either the organizers were very careful to ensure a good distribution of papers or, which I believe to be more likely, it represented the interest in the subject in the different areas. It is particularly notable, for example, that research for two of the papers from the United Kingdom was undertaken at the United Kingdom Atomic Energy Authority [10, 11]. At the time this field of research was very buoyant, with thousands of scientific reports and published papers pouring out annually and being reported in *Nuclear Science Abstracts*, which began publication in 1948 (all of which are still cited in the *Energy Citations Database*.)

As for the methods employed, they were almost entirely quantitative in character. The authors used structured self-completed questionnaires and interview schedules, diary forms or cards as well as the analysis of forms used to report, in one case, reference requests received and, in another, requests for journal issues. In virtually all cases the reporting was quantitative.

Over most of this period interest in the use of library services was strong, with academic libraries being a significant area. So much so that a review of the literature was prompted and published in the *Journal of Documentation* [12]. The driver for research of this kind was a perception that, perhaps, university students were not receiving the kind of support they needed for their studies and, consequently, there was an attempt to measure the satisfaction of students, researchers and teachers with library services.

In the United Kingdom, the Public Libraries and Museums Act of 1964 led to the establishment of a government department with responsibility for ensuring that local authorities provided an efficient service, and this mandate led to a number of studies of public library use. One of the most important of these efforts was an investigation into the use of public reference libraries

[13]. In a study involving 33 reference libraries and almost 30,000 response forms for personal visits and telephone and telex requests, it was reported that 70% of enquirers found what they wanted.

In the United States in the same period, library surveys continued to flourish – again, one of the most important was in the area of public libraries. The Rand Corporation undertook a study for the Beverly Hills Public Library in California (as a result of a donation from an anonymous resident), which sought to answer a variety of questions:

How should the library allocate its book budget? What kinds of books should it tend to buy? What types of households use the library? Why do some households not use the library? What is the cost of the various services provided by the library? What specific steps can the library take to improve its services? What are the library's options in choosing among the different circulation systems? For how long should the library allow books to be checked out? How frequently should overdue notices be sent out? Is an investment in a security system worthwhile? [14, p. v]

Some of these questions appear to be rather dated (inevitably), but the questions on community use and non-use remain of interest today and are becoming more significant as more information behavior is web-based. On non-use, the authors of the report were pessimistic (or, perhaps, realistic):

It appears that there is little that can be done to cause nonusers to use the library. Further, since the presence or absence of a child is critical in determining a household's use, declining family size may mean that the demand for library services will increase in a much slower rate in the future. [14, p. iv]

Throughout this period, the field we now know as *information behavior* was termed *user studies* and the focus was almost entirely upon how and for what purpose library and information systems were used. Two significant reviews used the concept of “the flow of information,” but, in fact, Menzel and his colleagues described their study as “a synthesizing review of completed studies of the behavior, habits, usages, experiences, and expressed needs of research scientists with regard to the obtaining of available scientific information” [15, p. 1] while Paisley, covering the behavioral sciences, noted

that, “[a]ny study dealing with the information-gathering and -disseminating behavior of scientists has been considered relevant to this review” [16, p. I-2].

These two studies resulted in two of the first reviews of “information needs and use” to be published in the *Annual Review of Information Science and Technology* [17, 18] and continue to be cited today.

Paisley’s review heralded something of a shift in focus for user studies, from science and technology to the social sciences, and the 1970s saw a number of investigations, still following the positivistic, quantitative model. One of the most significant of these, certainly in the United Kingdom, but of much wider relevance, was INFROSS (**IN**formation **RE**quirements **O**f the **S**ocial **S**ciences), an investigation based at the University of Bath under the direction of Maurice Line [19]. The investigation began in 1967 and was reported in 1971. It covered social science researchers, social scientists working in government, college of education lecturers and schoolteachers, and social workers [20, 21, 22, 23]. The main method employed was a self-completed questionnaire, mailed to 2,602 social scientists, with a 41.8% response rate. Given the length of the questionnaire, this response was quite remarkable. Line remarks:

At the end of the questionnaire, where we asked for suggestions for improvement of the information system, one person stated: “Your questionnaire is so long it has drained me of any original thoughts on the matter.” [19, p. 413]

The questionnaire survey was complemented by 125 interviews, some of them group interviews and, therefore, covering more than 125 individuals. A further output from INFROSS was Michael Brittain’s *Information and its users* [24], which, until Case’s review [25], was the only book-length review of the field.

Another major, national investigation followed quite quickly upon INFROSS in the United Kingdom. This was INISS (**IN**formation **N**eeds and **U**ses in **S**ocial **S**ervices **D**epartments) [26], which lasted five years from 1975 to 1980. The INFROSS study of social workers was a relatively minor part of the project as a whole and, at the time, there was an interest from government and from the funding agency (the British Library R&D

Department) in information provision to practitioners generally, rather than to researchers and academics.

INISS adopted an unusual research strategy: The project head and the four researchers carried out a total of 22 weeks of observation of social workers and their managers in five social services department. The participants were selected to represent the full range of work roles in such departments from director to administrative assistant. The structured observation method was employed (inspired by Mintzberg [27]), resulting in 5,839 records of communication events recorded on edge-notched cards that were subsequently transferred to punched cards for computer analysis (this was 1975-76). Following the observation period, an interview schedule was designed and interviews were carried out with 151 social services staff members in an effort to validate the results from the observational study.

Experience with INISS and, particularly, the writing of that part of the report entitled *A Week in the Life of a Social Services Department*, which drew not only upon the quantitative data from the 5,839 records but also from the qualitative information gathered in the process, led Wilson [28] to propose that qualitative methods should be adopted in research into what he proposed should be called “information seeking behavior.”

1980 to the Present

Perhaps because we are too close to the time frame, the past 20 years or so are a little more difficult to typify. One development is clear: Over the period, the subject has become one of the main areas of doctoral research in the broad area of librarianship and information science. No statistics are available to support this view, but we can point to the success of the doctoral workshops run as part of the ISIC (Information Seeking in Context) series of conferences and the grants for doctoral students to attend the SIG/USE conferences in the United States. In other words, one of the drivers in this period has been the drive for what we might call academic accreditation of the new faculty member.

A second phenomenon, associated with the first, has been the drive to establish theoretical and conceptual frameworks for the subject. Beginning with models of the information-seeking process [28, 29, 30], researchers

have moved on to test those models and to undertake their research within specific theoretical contexts. Thus, the cognitive approach has been employed [31], along with phenomenology [32], social constructivism (or constructionism) [33] and activity theory [34, 35], to name only a few. The theoretical diversity is, perhaps, healthy, but the hope of theoretical conversion and unanimity has not been achieved.

Partly as a consequence of adoption of specific approaches to the management of data through, for example, grounded theory approaches, and as a result of particular theoretical stances, qualitative methods seem to have become the norm for studies in the field. This shift has two consequences, at least. First, we now have many in-depth investigations into the information-seeking behavior of small samples of people – possibly all too often, samples of students of one kind or another. These studies can be very revealing but, on the other hand, we lack the large-scale studies of the past (like the INFROSS project mentioned earlier), which adopted quantitative methods for the analysis of large-scale survey data. As a result, there is little evidence of the impact of research on either policy or practice.

The technology of information management has become significant for practically all areas of life. The Internet is used at home to locate health information or compare prices on products; it is used in the workplace for the recovery of task-related information; it is used to support leisure activities; and it is used in educational institutions at all levels to provide information to support teachers in delivering class materials and to support students in their study activities. In other words, the existence of the technology itself has been a driver for change in the way people think about how to look for information.

This technology driver is reflected in the subjects of information behavior research in virtually all aspects from personal information management [36] through children's web-based information seeking [37] to school and university student use of the web [38, 39] and on to the world of work, or lack of it [40]. The volume of Internet-related research has increased in recent years and, as more and more information seekers employ the web, it is likely to increase further still.

Into the Future

The future of research in this field is the subject of another paper in this issue; consequently, I shall not attempt a comprehensive forecast (which, lacking data about the future, would be problematical). Instead, I shall continue the idea of considering the drivers of research and attempt at least some prognostications.

First, it is clear that technological developments of one kind or another will continue to drive research. Most immediately, the concepts of cloud computing and social networking systems will be a focus of considerable interest. Cloud computing is postulated to provide a new, virtual environment for collaboration. Google Wave, for example, is possibly the first attempt to replace e-mail with a cloud-based, real-time, interactive system for collaboration [41]. Social networking sites, such as Facebook, are already being used for collaborative work and these two developments immediately bring to mind a variety of potentially interesting research questions on, for example, how a geographically distributed team allocates information discovery and dissemination activities to its members.

Secondly, the digital divide is likely to persist, especially as, in the developed world, the gap between the rich and the poor, the haves and the have-nots, continues to widen. National and charitable initiatives to encourage the use of the Internet and the provision of venues (especially in public libraries) for access to the Internet are merely palliatives when the underlying problem demands political will and economic, rather than technological, solutions. The impact of “information lack” on the disadvantaged in society and, particularly, its economic effects will become of interest to researchers.

Thirdly, the economic divide between the rich countries and the poor countries, exacerbated later this century by the impact of global warming, will result in a continuing, expanding and illegal “economic migration” [42], placing new burdens on the rich societies and increasing pressures on locally provided social services, such as housing, unemployment benefits and health services. Exploring how the migrant discovers how to make his/her way in the world with and without access to information resources is a significant potential research area.

Fourthly, the impact of the Internet on children, its use in the educational

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process, its potential damage through sexual grooming and, related to the previous topic, its value in inducting migrant children into the new society will remain high on the research agenda of governments and, hence, academia.

Finally, although the list could be continued much further, I suspect that the present focus upon small-scale studies focusing upon the information behavior of readily accessible groups of people will decline as investigators discover that there is little new that can be said, and that there will be a growth in policy-related, large-scale projects aimed at discovering facts about information access and use that can guide government and business

action in relation to the deployment of information and communication technologies. This may result in a decline in academic research in the field, as the tendency is for governments and other public bodies to commission consultancy groups to undertake such work.

In other words, although the nature of information may change, and the context of information use may change, I see no end to the need to explore, partly for theoretical reasons, but increasingly for policy reasons, how people discover, access, use, store for future use, share and disseminate information of all kinds. ■

Resources Mentioned in the Article

- [1] Wilson, T.D. (1994.) Information needs and uses: Fifty years of progress. In B.C. Vickery, (Ed.). *Fifty years of information progress: A Journal of Documentation review* (pp. 15- 51). London: Aslib.
- [2] McDiarmid, E.W. (1940). *The library survey: Problems and methods*. Chicago, IL: American Library Association.
- [3] Wright, E.A., & Carnovsky, L. (1936). *Library service in a suburban area*. Chicago, IL: American Library Association.
- [4] Quigley, M.C., & Marcus, W.E. (1936). *Portrait of a library*. New York, NY: Appleton-Century.
- [5] Wellman, B., Smith A., Wells, A., & Kennedy, T. (2008). *Networked families*. Washington, DC: Pew Internet and American Life Project. Retrieved November 3, 2009, from www.pewinternet.org/Reports/2008/Networked-Families.aspx (Archived by WebCite at www.webcitation.org/5l0s2Qbmw)
- [6] Fox, S., & Vitak, J. (2008). *Degrees of access (May 2008 data)* Washington, DC: Pew Internet and American Life Project. Retrieved November 3, 2009, from www.pewinternet.org/Presentations/2008/Degrees-of-Access-%28May-2008-data%29.aspx (Archived by WebCite at www.webcitation.org/5l0rhTk94)
- [7] *The Royal Society Scientific Information Conference 21 June - 2 July 1948. Report and papers submitted*. (1948). London: The Society.
- [8] Bernal, J.D. (1948). Preliminary analysis of pilot questionnaire on the use of scientific literature. In *The Royal Society Scientific Information Conference 21 June - 2 July 1948. Report and papers submitted* (pp. 589-637). London: The Society.
- [9] *Proceedings of the International Conference on Scientific Information, Washington, D.C. - November 16-21 1958*. (1959). Washington, DC: National Academy of Science–National Research Council.
- [10] Hogg, I.H., & Rowland Smith, J. (1959). Information and literature use in a research and development organization. In *Proceedings of the International Conference on Scientific Information, Washington, D.C. - November 16-21, 1958* (pp. 131-162). Washington, DC: National Academy of Science–National Research Council.
- [11] Fishenden, R.M. (1959). Methods by which research workers find information. In *Proceedings of the International Conference on Scientific Information, Washington, D.C. - November 16-21, 1958* (pp. 163-180). Washington, DC: National Academy of Science–National Research Council.
- [12] Ford, G. (1973). Progress in documentation. Research in user behavior in university libraries. *Journal of Documentation*, 29(1), 85-106.
- [13] Clements, D.W.G. (1967). Use made of public reference libraries: A survey of personal users and telephone, telex, and postal inquiries. *Journal of Documentation*, 23(2), 131-145.
- [14] Newhouse, J.P., & Alexander, A.J. (1972). *An economic analysis of public library services*. Washington, DC: Rand Corporation.
- [15] Menzel, H., & Lieberman, L., & Dulchin, J. (1960). *Review of studies in the flow of information among scientists* (Vols. 1-2). New York: Columbia University, Bureau of Applied Social Research.

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Resources Mentioned in the Article, continued

- [16] Paisley, W.J. (1965). *The flow of (behavioral) science information: A review of the research literature*. Stanford, CA: Stanford University, Institute for Communication Research.
- [17] Menzel, H. (1966). Information needs and uses in science and technology. *Annual Review of Information Science and Technology* 1, 41-69.
- [18] Paisley, W.J. (1968). Information needs and uses. *Annual Review of Information Science and Technology* 3, 1-30.
- [19] Line, M. (1971). The information uses and needs of social scientists: An overview of INFROSS. *Aslib Proceedings*, 23(8), 412-434.
- [20] Bath University, Library. (1971). *Investigation into information requirements of the social sciences. Research report no. 1: Information requirements of researchers in the social sciences*. Bath, UK: Bath University.
- [21] Bath University, Library. (1971). *Investigation into information requirements of the social sciences. Research report no. 2: Information requirements of social scientists in government departments*. Bath, UK: Bath University.
- [22] Bath University, Library. (1971). *Investigation into information requirements of the social sciences. Research report no. 3: Information requirements of college of education lecturers and schoolteachers*. Bath, UK: Bath University.
- [23] Bath University, Library. (1971). *Investigation into information requirements of the social sciences. Research report no. 4: The information needs of social workers*. Bath, UK: Bath University.
- [24] Brittain, J. M. *Information and its users: A review with special reference to the social sciences*. Bath, UK: Bath University Press in association with Oriel Press, 1970.
- [25] Case, D. O. (2002). *Looking for information: A survey of research on information seeking, needs, and behavior* (1st ed.) New York: Academic Press/Elsevier Science. (Note: 2nd edition published 2006.)
- [26] Wilson, T.D., & Streatfield, D.R. (1980). "You can observe a lot..." A study of information use in local authority social services departments Conducted by Project INISS. Sheffield, UK: Postgraduate School of Librarianship and Information Science. (Occasional paper no. 12.)
- [27] Mintzberg, H. (1973). *The nature of managerial work*. Englewood Cliffs, NJ: Prentice Hall.
- [28] Wilson, T.D. (1981). On user studies and information needs. *Journal of Documentation*, 37(1), 3-15
- [29] Wilson, T.D. (1999). Models in information behavior research. *Journal of Documentation*, 55(3), 249-270. Retrieved November 30, 2009, from <http://informationr.net/tdw/publ/papers/1999JDoc.html>
- [30] Kuhlthau, C.C. (2004). *Seeking meaning: A process approach to library and information services* (2nd ed.). Santa Barbara, CA: Libraries Unlimited.
- [31] Ingwersen, P., & Jarvelin, K. (2005). *The turn. Integration of information seeking and retrieval in context*. Berlin: Springer.
- [32] Savolainen, R. (2008). *Everyday information practices: A social phenomenological perspective*. Lanham, MD: Scarecrow Press.
- [33] Tuominen, K., Talja, S., & Savolainen, R. (2005). The social constructionist viewpoint on information practices. In K. Fisher, S. Erdelez and L. McKechnie, (Eds.). *Theories of information behavior: A researcher's guide*. Medford, NJ: Information Today.
- [34] Wilson, T.D. (2006). A re-examination of information seeking behavior in the context of Activity Theory. *Information Research*, 11(4), paper 260. Retrieved November 30, 2009, from <http://informationr.net/ir/11-4/paper260.html>
- [35] Widen-Wulff, G., & Davenport, E. (2007). Activity systems, information sharing and the development of organizational knowledge in two Finnish firms: An exploratory study using Activity Theory. *Information Research*, 12(3), paper 310. Retrieved November 30, 2009, from <http://informationr.net/ir/12-3/paper310.html>
- [36] Jones, W. (2008). *Keeping found things found. The study and practice of personal information management*. Burlington, MA: Morgan Kaufman.
- [37] Enochsson, A. The development of children's web searching skills - a non-linear model. *Information Research*, 11(1), paper 240. Retrieved November 30, 2009, from <http://informationr.net/ir/11-1/paper240.html>

RESOURCES continued on next page

Resources Mentioned in the Article, continued

- [38] Heinström, J. (2006). Fast surfing for availability or deep diving into quality – motivation and information seeking among middle and high school students. *Information Research*, 11(4), paper 265. Retrieved November 30, 2009, from <http://informationr.net/ir/11-4/paper265.html>
- [39] Zhang, X., Angheliescu, H.G.B., & Yuan, X. (2005). Domain knowledge, search behavior, and search effectiveness of engineering and science students: An exploratory study. *Information Research*, 10(2), paper 217. Retrieved November 30, 2009, from <http://informationr.net/ir/10-2/paper217.html>
- [40] Savolainen, R. (2008). Autonomous, controlled and half-hearted. Unemployed people's motivations to seek information about jobs. *Information Research*, 13(4), paper 262. Retrieved November 30, 2009, from <http://informationr.net/ir/13-4/paper362.html>
- [41] Trapani, G. and Pash, A. (2009). *The complete guide to Google Wave*. Retrieved November 30, 2009, from <http://completewaveguide.com/> (Archived by WebCite at www.webcitation.org/5lgIVNOE9)
- [42] Kenyon, P. (2009). *I am justice: A journey out of Africa*. London: Preface Publishing.

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