

# Early Information Behavior Research

by Barbara M. Wildemuth and Donald O. Case

Special Section

Investigations of those who seek and use information have been an important aspect of information science since its beginnings. Some reviewers of the literature point to studies as early as 1916, or even 1902, as the start of this genre. Whatever is the case, it is clear that the explosion of scientific and technical literature during and immediately after World War II created a situation in which attention to information seeking was inevitable. Even the rapid development of computing devices (starting in 1939) and their subsequent application to the storage and manipulation of text were not enough to fully solve the problems of dissemination in the area of scientific and technical information. Hence it was that the first blossoming of information seeking and use studies tended to focus on the behaviors of scientists and engineers. Reviews of studies of this population and their information-related practices appeared almost yearly during the 1960s and continued well into the 1970s. It was not until the mid-1960s (and even then, haltingly) that we began to see attention focused on others who worked with information and knowledge: social scientists, physicians, managers and humanities scholars. Even with an expansion of focus, these investigations tended to be descriptive in nature and oriented toward traditional channels such as libraries, journals and conferences and toward practical improvements in dissemination.

## The Shift to a Focus on People and Their Behaviors

A major shift in information behavior (IB) research occurred in the 1980s. While the early use studies focused on a particular system or service and its

Barbara Wildemuth is a professor in the School of Information & Library Science, University of North Carolina at Chapel Hill. She can be reached by email at [wildem@ils.unc.edu](mailto:wildem@ils.unc.edu)

Donald Case is a professor in the School of Library & Information Science, College of Communications and Information Studies, University of Kentucky. He can be reached by email at [dcase@uky.edu](mailto:dcase@uky.edu)

users, the new generation of studies placed the information seeker/user in the center and did not presume the use of a particular resource or set of resources.

Some early studies had hinted at this shift in focus. For example, in 1968 Robert Taylor discussed psychological levels of information needs: visceral, conscious, formalized and compromised needs [1], and in 1973 Patrick Wilson defined the concept of situational relevance, that is, the relationship between an information object and an individual's personal situation and worldview [2]. Brenda Dervin [3] urged librarians to turn away from measuring "library activities" and "user demographics," and instead work on understanding the situations that led people to seek information; Nicholas Belkin, Robert Oddy and H.M. Brooks [4] proposed an anomalous state of knowledge as motivating people's information seeking. Each of these scholars, in his or her own way, was pushing the field to take the perspective of the information seeker/user, rather than the library or information retrieval (IR) system.

In 1981 and 1982, Brenda Dervin, Thomas Jacobson and Michael Nilan published two articles [5, 6] exploring how one might go about studying the situations and decisions that led to information seeking. Their emphasis on situational gaps – and how we might help people to overcome them – brought a new perspective to the study of information behavior. A few years later, Dervin and Nilan published what proved to be a highly cited chapter in the *Annual Review of Information Science and Technology*, entitled, "Information needs and uses" [7]. Their review and commentary served as a call to arms for information behavior researchers. It solidified the field's move toward a user-centered perspective on information behaviors and led the way in making user-centered research the dominant approach in information behavior research.

This new focus on the information seeker/user also made the wide variability of user behaviors visible. Researchers found that different people behaved quite differently when performing similar tasks and that the same person might behave quite differently in different situations. Christine

Borgman [8] identified performance differences as large as 20:1 across multiple users of computer systems, while the qualitative methods of Dervin, Nilan and Jacobson [6] uncovered wide variation in question types and information needs among people in a highly similar situation. These findings highlighted the inherent subjectivity of information behaviors and encouraged researchers to take this subjectivity into account, often by employing qualitative methods that could expose the context of the information behaviors under investigation.

### Information Behaviors as Dynamic Processes

As the attention of IB researchers focused on people and their many uses of information, rather than on their use of particular sources and services, it became clear that an important aspect of information behaviors is that they occur over time. An episode of information seeking may last just a few seconds (for example, when someone is looking up the phone number of a new restaurant). However, a complete sequence of information seeking and use may span months or even years as when a doctoral student is preparing the literature review for his dissertation. As Marcia Bates [9] argued in 1989, in “real-life searches” searchers are likely to start at one point with one piece of information and “move through a variety of sources. Each new piece of information they encounter gives them new ideas and directions to follow and, consequently, a new conception of the query. At each stage they are not just modifying the search terms used in order to get a better match for a single query. Rather the query itself (as well as the search terms used) is continually shifting, in part or whole” (pp. 409-410).

Once we began to study information seeking and use processes over time, it became increasingly clear that many of the important constructs related to information behavior are dynamic – they evolve over time. As a person finds useful information and applies it to the current goal, the goal itself may shift (or not). The person’s ideas about the problem change as he or she learns more. Other external events may occur that affect the importance of the problem to the information seeker. These and other possible changes affecting information behaviors as they occur over time called for the use of different research methods.

Early use studies typically used survey methods, interviews or one-time observations of a particular information behavior such as entering the library

or searching a particular database. They typically focused on variables that provided an overview of people’s information interactions with a particular service or system (for example, precision of a search or frequency of library visits). With attention focused on the dynamic nature of information behaviors, longitudinal and qualitative research approaches were often adopted. Some important early examples of such approaches included Carol Kuhlthau’s development of the information search process model [10, 11], Raya Fidel’s work on search moves [12], Donald Case’s study of humanities scholars [13] and Liwen Qiu’s study of navigation in hypertext [14]. Experimentation with a variety of methods has continued to be a hallmark of information behavior research [15].

During the early 1990s, a number of researchers focused particular attention on the concept of relevance and the criteria people use when making relevance judgments. In early information retrieval studies, relevance was usually seen as a specification of topicality and was defined as the match between a subject term in a query and a subject term in a document [16]. This definition was distinguished from more user-oriented views, which incorporated differences in user judgments of relevance across different users and by the same user across time. To investigate the concept of relevance further, a number of studies of relevance judgment processes were conducted (e.g., Barry [17]; Bruce [18]; Park [19], [20]; Schamber [21]; Wang & Soergel [22]).

### Moving Off-Campus: Studies of Everyday Life Information Seeking

While many studies continue to examine information behaviors in academic settings, incorporating students or faculty as study participants, a new stream of research began to gain momentum in the mid-1990s. These studies examined information behaviors within the context of everyday life activities. Reijo Savolainen first defined the scope of this subfield of information behavior research [23], noting that it included people’s information behaviors at work, at leisure and while pursuing hobbies and included interactions with both orienting and practical information. This approach to information behavior research takes a holistic view of people’s lives, building directly on Brenda Dervin’s 1983 work on Sense Making

Theory [24], and the earlier interviews by Dervin and others with members of the general public (see, for example, Dervin & Greenberg [25]; Chen & Herson [26]). This line of research has led to a reconsideration of information seeking in the context of individual work tasks and goals such as the studies by Byström & Jarvelin [27] and Vakkari [28].

Major theoretical contributions to this line of research were made by Elfreda Chatman, beginning with her study of information flows among the poor in 1985 [29]. Through studies of elderly women [30], women prisoners [31] and other populations, she developed a definition of information poverty and how it applies to the “small worlds” inhabited by her study participants. Drawing on the idea of situational relevance earlier proposed by Patrick Wilson [2], she identified three key aspects of information poverty: risk-taking, secrecy and deception. Her work continues to inspire the research of current scholars.

During the same period, the first of the biennial Information Seeking in Context conferences was held in Tampere, Finland, and T.D. Wilson founded the online journal, *Information Research*. Both of these venues were important for the presentation of information behavior research, generally, and for results from studies of everyday life information seeking, more specifically. They included studies conducted in a variety of contexts, from studies of teenagers’ health information needs [32] to explorations of journalists’ information behaviors [33] to investigations of information use in households in Scotland [34]. This stream of research is still blossoming in current information behavior studies.

### Summary: The Early Years as a Foundation for Current Research

Some of the major trends in the early years of information behavior

research have been briefly summarized here, and they provide a strong foundation for future studies. Particular threads of this research, such as the emphasis on everyday-life information seeking and the focus on the user’s context, have continued over the last decade and are likely to continue into the future. It is also likely that interest in the behaviors of academics and other information workers will continue to be a strong theme. They are the most intensive information users, so additional study of their information behaviors is warranted.

In addition, new streams of research have begun. For example, recent studies are focusing on the social and often collaborative nature of information behaviors. In these studies, people are recognized for the social beings that they are, and the effects of their social surroundings on them are taken into account, as well as their effects on those surroundings. In addition, the need to understand the context of the information behaviors under investigation is now being recognized. The technological, physical and political contexts of information behaviors both constrain those behaviors and afford particular opportunities. Current studies are beginning to investigate the nature of these influences.

This review of the early years of information behavior research ends in the late 1990s, when ASIS&T’s Special Interest Group/Information Needs, Seeking and Use (SIG/USE) was founded. The initiation of the ISIC conferences, the founding of the *Information Research* journal and an ASIS&T pre-conference workshop on relevance studies were all indicators that information behavior research was coalescing as a subfield of information science. The energy of those early years of SIG/USE has continued, and this area of research continues to flourish, as can be seen by the other contributions in this issue. ■

### Resources Mentioned in the Article

- [1] Taylor, R.S. (1968). Question-negotiation and information seeking in libraries. *College & Research Libraries*, 29(3), 178-194.
- [2] Wilson, P. (1973). Situational relevance. *Information Storage and Retrieval*, 9(8), 457-471.
- [3] Dervin, B. (1977). Useful theory for librarianship: Communication, not information. *Drexel Library Quarterly*, 13, 16-32.
- [4] Belkin, N.J., Oddy, R.N., & Brooks, H.M. (1982). ASK for information retrieval: Part I. Background and theory. *Journal of Documentation*, 38(2), 61-71.
- [5] Dervin, B., Nilan, M., & Jacobson, T. (1981). Improving predictions of information use: A comparison of predictor types in a health communication setting. In M. Burgoon (Ed.), *Communication Yearbook 5* (pp. 807-830). Beverly Hills, CA: Sage Publications.

RESOURCES continued on next page

## Resources Mentioned in the Article, continued

- [6] Dervin, B., Jacobson, T. & Nilan, M. (1982). Measuring aspects of information seeking: A test of quantitative/qualitative methodology. In M. Burgoon (Ed.), *Communication Yearbook 6* (pp. 419-445). Beverly Hills, CA: Sage Publications.
- [7] Dervin, B., & Nilan, M. (1986). Information needs and uses. In M. Williams (Ed.), *Annual Review of Information Science and Technology 21* (pp. 3-33). Medford, NJ: Learned Information, Inc.
- [8] Borgman, C.L. (1989). All users of information retrieval are not created equal: An exploration into individual differences. *Information Processing & Management*, 25(3), 237-251.
- [9] Bates, M.J. (1989). The design of browsing and berrypicking techniques for the online search interface. *Online Review*, 13(5), 407-424.
- [10] Kuhlthau, C.C. (1991). Inside the search process: Information seeking from the user's perspective. *Journal of the American Society for Information Science*, 42(5), 361-371.
- [11] Kuhlthau, C.C. (1993). *Seeking Meaning: A Process Approach to Library and Information Services*. Norwood, NJ: Ablex.
- [12] Fidel, R. (1991). Searchers' selection of search keys: I. The selection routine, II. Controlled vocabulary or free-text searching, [and] III. Searching style. *Journal of the American Society for Information Science*, 42(7), 490-527.
- [13] Case, D.O. (1991). The collection and use of information by some American historians: A study of motives and methods. *Library Quarterly*, 61(1), 61-82.
- [14] Qiu, L. (1994). Frequency distributions of hypertext path patterns: A pragmatic approach. *Information Processing & Management*, 30(1), 131-140.
- [15] Wildemuth, B. M. (2002). Introduction and overview: Effective methods for studying information seeking and use. *Journal of the American Society for Information Science and Technology*, 53, 1218-1222.
- [16] Schamber, L., Eisenberg, M.B., & Nilan, M.S. (1990). A Re-examination of relevance: Toward a dynamic, situational definition. *Information Processing & Management*, 26(6), 755-776.
- [17] Barry, C. L. (1994). User-defined relevance criteria: An exploratory study. *Journal of the American Society for Information Science*, 45(3), 149-159.
- [18] Bruce, H. W. (1994). A cognitive view of the situational dynamism of user-centered relevance estimation. *Journal of the American Society of Information Science*, 45(3), 142-148.
- [19] Park, T.M. (1993). The nature of relevance in information retrieval: An empirical study. *Library Quarterly*, 63(3), 318-351.
- [20] Park, T.M. (1994). Toward a theory of user-based relevance: A call for a new paradigm of inquiry. *Journal of the American Society for Information Science*, 45(3), 135-141.
- [21] Schamber, L. (1991). Users' criteria for evaluation in a multimedia environment. *ASIS '91: Proceedings of the 54th ASIS Annual Meeting*, 126-133.
- [22] Wang, P., & Soergel, D. (1993). Beyond topical relevance: Document selection behavior of real users of IR systems. *ASIS '93: Proceedings of the 56th ASIS Annual Meeting*, 87-92.
- [23] Savolainen, R. (1995). Everyday life information seeking: Approaching information seeking in the context of "way of life." *Library & Information Science Research*, 17(3), 259-294.
- [24] Dervin, B. (1983). An overview of sense-making research: Concepts, methods, and results to date. Paper presented at the International Communication Association annual meeting. Retrieved November 21, 2009, from [www.ideals.illinois.edu/bitstream/handle/2142/2281/Dervin83a.htm](http://www.ideals.illinois.edu/bitstream/handle/2142/2281/Dervin83a.htm).
- [25] Dervin, B., & Greenberg, B. S. (1972). The communication environment of the urban poor. In F. Kline & P. Titchener (Eds.), *Current perspectives in mass communication research* (pp. 195-235). Beverly Hills: Sage Publications.
- [26] Chen, C., & Hernon, P. (1982). *Information-seeking: Assessing and anticipating user needs*. New York: Neal-Schuman.
- [27] Byström, K., & Jarvelin, K. (1995). Task complexity affects information seeking and use. *Information Processing & Management*, 31(2), 191-213.
- [28] Vakkari, P. (1999). Task complexity, problem structure and information actions: integrating studies on information seeking and retrieval. *Information Processing & Management*, 35(6), 819-838.
- [29] Chatman, E.A. (1985). Information, mass media use and the working poor. *Library & Information Science Research*, 7(2), 97-113.
- [30] Chatman, E.A. (1992). *The information world of retired women*. Westport, CT: Greenwood Press.
- [31] Chatman, E.A. (1999). A theory of life in the round. *Journal of the American Society for Information Science*, 50(3), 207-217.
- [32] Rolinson, J. (1998). Health information for the teenage years: What do they want to know? *Information Research*, 3(3). Retrieved November 21, 2009, from <http://informationr.net/ir/3-3/paper42.html>.
- [33] Fabritius, H. (1998). Information seeking in the newsroom: Application of the cognitive framework for analysis of the work context. *Information Research*, 4(2). Retrieved November 21, 2009, from <http://informationr.net/ir/4-2/istic/fabritiu.html>.
- [34] Davenport, E., Higgins, M., & Somerville, I. (1996). The appropriation of home information systems in Scottish households. *Information Seeking in Context. Proceedings of an international conference on Information Seeking in Context, Tampere, Finland 1996*. London: Taylor Graham, 386-411.