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Source Selection Among Information Seekers: Ideals and Realities

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Abstract

In a study examining the information behavior of 9 individuals over 10 weeks in daily life contexts, participants were asked to identify ideal sources of help for the questions and issues they faced. The data show how people's expectation of the usefulness of information sources varies by the information seeker's gender, and source characteristics such as accessibility, trustworthiness, and reliability. Usefulness of sources has both cognitive and affective aspects. Further, discrepancies between participants' stated ideals, and the sources actually used, are analyzed. The study results suggest ways to encourage use of formal information systems and services.

1. Introduction

That advanced capitalist societies have moved into a global information society is generally taken for granted. How people actually interact with information, however, has yet to be fully elucidated. Despite widespread research into information behavior within organizations and other workplaces, a basic understanding is lacking of human information behavior in broader contexts. In particular, how and why individuals seek information in daily life situations remains to be fully elucidated. This gap in basic knowledge was addressed in this study. It is well established in the literature of information science (Harris and Dewdney 1994; Vakkari 1997) that information behavior is directly related to the specific situations or contexts (including personal, socio-political, leisure, and work-related contexts) that give rise to information needs. Therefore, consideration of the context-need dyad is the most fruitful way to study information behavior. Information behavior constitutes:

- the context of information need,
- intervening variables (psychological, demographic, role-related or interpersonal, environmental, source characteristics),
- information seeking behavior (passive and active),
- information processing, and
- information use.

Specifically, the research problem considered in this research project was:

How does individuals' information behavior change across situations or contexts?

This study enabled intra-individual comparisons of information behavior across a variety of situations. However, this paper examines only specific aspects of the study, focusing on the following sub-problems, thus excluding detailed consideration of all other aspects of information behavior noted in the previous definition:

- What do people consider to be ideal sources of help in daily life decision-making?
- What makes a source of help 'ideal'?
- What patterns may be identified in the criteria people use to select a source of help?
- What discrepancies exist between people's stated ideals and the sources actually used?

2. Theoretical Frameworks

A significant conceptual underpinning of this research is constructivism, in that it is assumed that the research participants are actively constructing personal meanings during the course of their daily lives. Therefore, information behavior is subjective, and a connection between information provision and information use cannot be assumed. The present study was concerned, therefore, with exploring the subjective meanings that people attach to their information experiences. The fundamental theoretical approach to information behavior that informs the study

is sense-making (Dervin 1983; Dervin 1992). Core assumptions of sense-making that particularly pertain to this research include:

- information is not external to humans and does not exist independently of people but is a product of human observation;
- information is subjective;
- information seeking and use are activities that people undertake to construct and create sense;
- sense-making behavior is partly situationally-dependent and predictable on the basis of those situations;
- sense-making focuses on discovering how people construct personal sense, rather than assuming necessary and predictable connections between information and its use.

Thus, this research will explore the sense-making behavior of individuals as they seek and make use of information in their daily lives. There is no assumed connection between the discovery or delivery of information and the use made of it, nor is it assumed that information is necessarily useful. Information is defined as that which is judged by the research participants to be useful as they create sense (e.g., in making decisions, coming to understandings, and meeting their emotional needs). There is no distinction made between 'information' and 'help', as the latter is a concept much easier to understand for persons outside of information science. In this study, 'help' is conceptualized as information, i.e., that which is useful to information seekers. Therefore, the terms 'information' and 'help' are used interchangeably.

Additionally, Wilson's revised general model of information behavior (Wilson 1997) was used to suggest the potentially significant role of affective variables in information behavior. Initially, an information seeker's perceptions of the context of an information need may be influenced to a large degree by her/his emotional responses. The activating mechanism(s) that spur an individual to

locate information (passively or actively) are frequently also emotional in nature. As well, affective variables may intervene between the context of an information need and the actual seeking behavior. This study provided an opportunity to explore the circumstances and intervening variables affecting the choice of information source for various types of information seeking activities.

3. Methodology

Since relatively little is understood about the complexity of information behavior, this study was exploratory. A pilot study refined the methods used this project. In the pilot phase, the design described below was applied to the information behavior of two individuals over the course of 10 weeks. Ethical approval for the study was obtained from the sponsoring institution (Victoria University of Wellington, New Zealand), and signed, informed consent was obtained from all participants.

The data collection for the study was carried out over the course of 10 weeks, during which the information behaviors of 9 participants were analyzed. These behaviors were examined in a wide variety of specific situations, in the context of daily life (work, school, domestic, and leisure activities). Specific data gathering techniques were qualitative, involving regular interviews and personal diaries. Participation was solicited from individuals in a wide variety of circumstances, using a handshake sampling method, as a high degree of trust was needed in order for participants to willingly submit to the in-depth, time-consuming, and personal exploration of their information behavior that was asked of them. Each participant took part in an initial interview in which the nature of the study was explained, informed consent was obtained, diary sheets were provided, and regular times for interviews were established.

3.1 Diaries

Participants were asked to fill in their diary entries on a weekly basis. The structure of the diary sheets suggested several open-ended questions to focus the participants' thinking about their information behaviors in a particular situation (i.e., focussing on a particular problem or decision they faced).

Participants were asked to write their responses on the sheets. The diary question used were:

- Describe a time this week when you needed help to figure out a problem or answer a question.
- What did you do to try to solve your problem or answer your question?
- How did you feel about your experiences as you tried to get help?
- What were you thinking about when you tried to get help?
- Was your problem solved or your question answered?

The diaries provided participants with opportunities to reflect on their own information behavior, and to recall details of particular information seeking situations. A similar diary method has been used successfully in workplace situations (Barry 1997).

3.2 Interviews

The diary entries were used as a basis for in-depth exploration of participants' information behaviors in weekly interviews, scheduled at the convenience of the participant. The interviews were relatively unstructured, but each interview centered on a specific situation selected to maximize the diversity of contexts (work, school, domestic life, leisure activities). The questions used to focus the interviews were:

1. Let's focus on [insert a situation described in the diary]. Can you tell me about this situation?
2. What kinds of help did you need?
3. Who did you talk or listen to/Where did you go/What did you read or watch to find help?
4. For each source mentioned [one at a time], please tell me what you found out (briefly)?

5. For each source mentioned, please tell me if and how this helped you?
6. How were you feeling/what were your thoughts/what were you trying to accomplish as you sought help from each source?
7. How did you feel after your encounters with each of these sources [ask separately for each source]? What concerns or questions do you still have?
8. How do you plan to find out more about these concerns or questions?
9. Can you describe the perfect source that could provide the help you wanted in this situation?
10. What would you want to find out?
11. What would make this source of help ideal?
12. What stopped you from getting the help you wanted/what barriers did you experience?

Despite this list of questions, interviewers were encouraged to treat the interviews as conversations, following interesting leads as they arose, and allowing participants to talk about those aspects of their informational experiences that were particularly salient for the participant. Each interview elicited participants' reflections on many aspects of their information behavior (e.g., cognitive, affective, barriers faced). Interview lengths varied from one-half hour to several hours, depending on the participant's interest and available time, and the skill of the interviewer. Participants were interviewed once per week for ten weeks, but due to two instances in which interviews could not be scheduled, the data set contains 88 interviews. Trained research assistants conducted the interviews, and taped and transcribed each interview as soon as possible following the interview. Analyses by a research assistant and the principal investigator proceeded qualitatively, to identify patterns in the data. Because of variation in the interviews, there was some diversity in interviewing depth and form. Some interviews were not included in some of the analyses

because, though interesting and useful in other contexts, the interviews strayed significantly from the questions posed.

4. Results and Discussion

Because the number of participants in this study is small, and the study is exploratory, the generalizability of results is uncertain. What the results do provide are promising paths for future research, and they suggest significant variables in information behavior. Generalizability of interview data from one culture to another may also be questioned. Since the study participants were all residents of New Zealand, there may be cultural peculiarities that impact upon the data presented. Culturally, the dominant New Zealand culture is much more similar than different to dominant North American culture. However, the principal investigator has experience living in New Zealand, as well as in North America, and has some basis for discerning the possible influences of cultural differences. There were no instances in which cultural influences on the study results were discernibly different from results that would be obtained in a study conducted in North America.

4.1 Situations Discussed in Interviews

In 53 interviews, discussion focused on a personal concern. Of these, 29 related to recreational activities (such as a trip or game), while 14 related to unpaid work (such as home repair, housework, or volunteer work), and 4 related to health concerns. In 14 interviews, the issue discussed related to a personal crisis (an unexpected problem), and 2 related to issues having to do with the participant acting as an intermediary for another person (i.e., acting on behalf of one or more other persons).

In 24 interviews, discussion focused on a work-related concern. Of these, 18 related to normal work tasks, while 6 related to a crisis situation in the workplace. In 11 interviews, discussion focused on school-related concerns. In these interviews, participants were students. Assignment-related concerns were the focus of 7 interviews, one of which was a crisis situation, while extra-curricular issues were the focus of 4 interviews.

4.2 Sources Used

This data is based on 79 searches for help or information, in which participants discussed a total of 272 information sources used. On average, each instance of help seeking used 3.4 sources. In personal situations, 57% of the time the first source approached was a person, in 17% of cases the first source was a print source, and in 9% of cases the first source was an electronic one. Therefore, in personal situations, the clear preference was to approach personal sources of information (people) before other types of sources. In work situations, in 54% of cases the first source approached was a personal source, in 33% of cases the first source was a print source, and in 13% of cases the first choice was an electronic source. Again, in work situations, personal sources of help were the sources of choice. In school-related situations, print sources were approached first in 45% of cases, while electronic sources were used first in 36% of cases, and personal sources in 18% of cases. Clearly, in school-related situations, there exists a reversal of the previous trend towards using personal sources of help first, in favor of electronic and print sources. This discrepancy between situations in terms of the initial source used may be a point for further research.

Personal sources of help

In forty-five of 88 (51%) interviews, participants turned first to personal sources of help for their questions. Of all sources used, personal sources accounted for 56% of sources chosen. Of personal sources chosen, 39% were via telephone, while 61% were face-to-face. Thirty-four percent of all information sources used was characterized by face-to-face personal communication. Thirty-four percent of personal sources used were friends, relatives, or co-workers. This category represents 19% of all sources used. Nineteen percent of all sources used were non-professional sources.

The apparent preference of information sources was direct personal contact. More than a third of information sources used involved face-to-face interpersonal communication. An additional 22% of sources were communications via the telephone. People talk to people when they face a problem or issue in their daily

lives, and nearly one-fifth of the time those personal sources of help will be friends, relatives or co-workers. This choice is not necessarily for reasons of convenience, since often it is necessary to use other means, such as special visits or the telephone to make contact. Although listed as electronic sources, e-mail, fax, and voice-mail also may be considered forms of interpersonal communication. If these were included with personal sources, this would raise the total use of interpersonal sources to 60% of all sources used.

The reasons provided for using personal sources of help included instrumental and affective reasons. For instance, a discussion with friends was the first choice of help for a male participant who was preparing to participate in an on-line role-playing game. While on an instrumental level, the help received was not very useful, the source was perceived as convenient, the interaction was “enjoyable”, and an expected result of the discussion was that the participant would get to know these friends better for the future. Therefore, a social goal (i.e., strengthening social ties) partly motivated this interaction. Another male participant seeking information about purchasing a CD recorder approached a co-worker who was perceived as knowledgeable. The participant found the help very useful. An example of incidental help finding occurred for another male participant planning a ski trip. He encountered a cab driver and in passing asked his advice, not expecting any help. However, the help he received turned out to be surprisingly useful.

Formal sources of help: print

Of all sources approached for help, 23% were print sources, and print sources were used in 43% of situations. Of the print sources used, 22% were phone directories. When participants used print sources, these were frequently the first or second sources used (print sources were the first or second choice in 73% of searches which used print sources). This suggests that print sources were considered a good starting point for information. This may be due to their convenience, although in several cases considerable effort was expended in locating these print sources. Participants mentioned that they turned to print

sources for recent information, for detailed and for specific information. Often participants expressed skepticism about their expectations of the usefulness of print sources, but they were frequently surprised by how useful these turned out to be. This low expectation of usefulness may partially explain relatively low use of print reference sources by the general public, and raises the question of why this negative attitude exists, despite positive experiences.

Other reasons for the popularity of print sources may be the manner in which information is obtained in print sources. Information is more detailed and perhaps more easily verifiable than it is from personal sources. In addition, a print source requires less vulnerability and personal risk-taking than making an enquiry of a personal source. Certainly the skills to utilize print sources are more widespread than for electronic sources.

Although included as a print source, it may be that the telephone directory should be considered an extension of personal sources. In all but one case the telephone directory was used to locate a number to phone a person in search for information. Telephone directories represented 5% of all sources used in the 79 searches. This would easily make this source the most valuable reference tool used in everyday information searching. In light of research that demonstrates the barriers that people face in trying to negotiate the structure of telephone directories, perhaps more importance might be placed on making this source of help more intuitive (Harris and Dewdney 1994).

Formal sources of help: electronic

Of all sources selected for use, 21% were electronic, and 12% were the first source used. Of electronic sources, 12% were faxes, voice mails and e-mails. Excluding e-mail, voice mail, and fax, electronic sources accounted for 15% of sources used. There is no indication that electronic sources are actually the preferred information sources, even using a broad definition of electronic sources. If one counts only sources such as databases and internet sources, these represent only 13% of sources used. Analysis of those instances where access to electronic sources could be confirmed shows that only in 21% of those

cases were these sources the first chosen. In an additional 27% of cases these sources were the second source used. In 52% of cases electronic sources were used as a third to sixth choice. This would suggest only a moderate degree of confidence in these sources as a primary information tool to help solve daily problems. In many cases, it appears that these sources were used to verify or supplement information rather than as an initial source. This result may be due to the perception that a question or issue needs to be substantially defined prior to attempting to search electronic sources. Relatively low use of electronic sources in these situations also may suggest a lack of confidence in the quality or authority of digital information sources. When electronic sources were used, more sources than average were used, suggesting that they were of limited usefulness.

Participants indicated a range of reasons for turning to electronic sources, including wanting very specific information, and wanting to make contacts with others (via email). They generally had low expectations of the usefulness of electronic sources, and found that the actual usefulness of these sources was mixed.

4.3 Variation by gender

Gender differences were analyzed, due to previous research that suggests variation in information behavior by gender (Julien 1999). Although differences by gender must be treated carefully due to the small numbers of participants in this study, some trends were identified. Although both male and female participants selected electronic sources as their first choice 21% of the time, overall among the total pool of sources used by males, 54% were personal, 26% were electronic, and 20% were print. Among the total pool of sources used by females, 57% were personal, 25% were print, and 18% were electronic. Thus, males seemed to turn to electronic sources more than the females, and females turned more to personal and print sources. However, there is a clear preference for personal sources among all participants. Males and females used personal sources as their first choice 58% of the time. Print sources were selected first by

females 28% of the time, and by males 23% of the time, and electronic sources were selected first by females 13% of the time, and by males 19% of the time.

4.4 Ideal sources

Because the perceived ideal source of help varied so dramatically by gender, these data are presented for male and female respondents separately. For male respondents, 65% of their ideal sources were electronic in nature, such as a database or web site. The next most common ideal source (28%) described was a human source (e.g., an experienced person). The remaining 3% were print sources. These numbers would suggest that among the male participants the ideal source was perceived to be electronic. However, there is still a perceived need in certain circumstances to prefer human sources.

Female respondents' choices for ideal sources included personal sources (51%), print sources (29%), and electronic sources (12%). These data would suggest that the female respondents viewed personal sources as the most valuable for information seeking. The electronic sources identified as potentially ideal were generally described as databases, which offer quick and easy access to information. Human sources were viewed as ideal for a wide variety of reasons, from their ability to make judgments and offer informed opinions, to interpersonal qualities such as the ability to empathize or to offer assurance. For all participants, a range of reasons for identifying particular ideal sources was described. Overall, 164 different descriptors or reasons were identified. The most important criteria, regardless of the form of the ideal source named, was ease and speed of use, named in 33% of cases (54 of 164 reasons). The second most named criteria had to do with the value of information perceived to be available from the ideal source. When applied to human sources, this criteria focused on the value of advice and opinion. A human source is ideal, said one participant, "because human beings can deal with things that are not cut and dried...you can't ask a question to a machine." Thus, the ability of people to offer advice on the basis of experience, and to address complex or 'fuzzy' issues, was prized. Less important criteria included convenience (12%), precision (11%),

comprehensiveness (10%), friendliness/caring/respectful attitude (7%), recency (6%), flexibility (5%), simplicity (1%), and free of cost (0.06%). All these criteria were cited for the full range of possible ideal sources—print, electronic, and human. Whether a particular source was perceived to fulfill any of these criteria had to do with each participant's individual situation and the question at hand. It is interesting to note that electronic information was not always perceived to be the most accessible or quickest. However, accessibility of current, relevant information was key to the desire to use electronic resources. The ability to move to different levels of detail was also considered very important. The range of reasons for idealizing human sources emphasized directness of communication and ability to make knowledgeable judgments. It can be concluded that although convenience and speed were significant factors in male respondents' choices of sources, information quality and reliability were also extremely significant. A convenient or fast source may not be selected if it is not perceived as reliable, useful, or trustworthy.

Interestingly, when participants described ideal sources in the context of crises, as opposed to everyday issues, 6% of sources described were electronic, 22% were print, and 61% were personal. Frequently the value of human sources was centered in the ability to make value judgments based on life experience. Even in crisis situations, participants expressed a range of reasons for identifying a particular ideal source, from convenience, to quality, to trust and respect. Analyzing ideal sources named according to the information need situation, it was found that in work-related situations, 43% of descriptions were of human sources, 41% were of electronic sources, and 15% were of print sources. Human sources were most desired largely because of their ability to make informed judgments based on experience. Electronic resources were cited as particularly useful because of easy access, and well-indexed information. Print sources (e.g., guides and handbooks) were valued as brief summaries of information for quick reference purposes. In personal situations, 42% of ideal sources described were personal (human), 36% were electronic, and 22% were print. In school-related

situations, 45% of ideal sources described were personal (human), 41% were print, and 14% were electronic. In this context, human sources were often cited as the most efficient means to obtain necessary information. The need for well-organized information was also noted in this context.

Surprisingly, some participants indicated that for some situations, an ideal source would not be wanted. Although they could identify an ideal source, these participants expressed a range of reasons why that ideal source would not be wanted. For example, one participant indicated that an organized, centralized database, while ideal for providing quick access to needed information, also would be anti-competitive. The value of a competitive information market was more important for this participant than convenient and centralized access. Another participant, despite wanting to be able to speak to a knowledgeable person, would miss the pleasurable and rewarding experience of finding the information needed on her own. The ability of participants to identify an ideal source of help, and to simultaneously reject that, has implications for information service providers. Such an apparent paradox highlights the complexity of people's decision making about the information sources they turn to, and underscores the need for information providers to respond flexibly to information seekers.

4.5 Mismatch Between Ideal and Sources Approached

While the participants in this study demonstrated a preference for personal sources of help as they faced problems and decisions in their daily lives, they were frequently forced to extend their help seeking to several sources, and to make use of formal information sources, with all their limitations. The compromise that appeared to be made by the male participants, in idealizing electronic sources of information, but in first approaching personal sources of help, requires further elucidation. In addition, since speed of access and ease of use are paramount, it is clear that having to approach an average of 3.4 sources to find information limits speed and ease in information seeking. Even at that, for some situations, the help needed was not found.

Theoretical Implications

Theoretically, identification of ideal sources of help, and exploration of the reasons for those choices, has value in developing models of information behavior that include consideration of the compromises that people must make. Current models of information behavior generally focus on information successes, that is, on those instances in which people make use of information that was deliberately sought.

There are also theoretical implications for information behavior models in the degree to which affective factors clearly influence decision-making about appropriate sources of help. The apparent need for people to seek insight into ill-defined issues, to draw upon the experience of others, and to have that experience mediated in an affectively comforting manner, is currently unaccounted for in concepts of information behavior. While a rich model of information behavior remains elusive, there are a number of variables that need to be accounted for. These variables are only beginning to be elucidated.

Practical Implications

One of the most obvious conclusions that may be drawn from these data are that the criteria generally applied by information service providers to evaluate the usefulness of formal information sources for use in contexts such as work or education are not necessarily those of primary importance to actual people seeking information to help them solve problems in their daily lives. While ease of use, comprehensiveness, precision, and recency are valued by those who deliver information services, these features are not necessarily perceived to be true for formal information sources (print and electronic). In addition, these criteria do not account for the value that people place on access to human experience and advice, to a source that is able to field questions about ill-defined issues, or to friendly, caring sources that leave the information seeker feeling respected. Interestingly, while findings such as these have been identified in previous studies as well (Julien 1999), most efforts aimed at improving information services continue to focus on maximizing precision and efficiency.

Another clear implication of this research is that information intermediaries (e.g., reference librarians) might consider moving away from the traditionally prescribed role as an impartial guide to information sources. There are, in fact, people needing help to solve questions who are seeking “biased” information; that is, opinion, advice, and judgments. Do some questions, even in a formal information service environment, require response by a person with obvious and well-informed ideas, attitudes, and experience on a topic of concern? Should clients be made aware that an information service provider has a particular subject background or set of experiences that might be brought to bear on information questions?

Further Research

Clearly, only a portion of the research questions pursued in this study has been examined in this paper. However, even this subset of analyses suggests intriguing avenues for future research. First, it must be noted that since this study was based on a small number of participants, the findings noted here require confirmation with a larger data set. More specifically, further probing of the gender differences in ideal source selection is warranted, since such research may indicate increased flexibility for information service providers. In addition, the affective factors that mediate people’s interaction with information sources require significantly more research attention. As long as research is largely limited to so-called ‘rational’ or cognitive conceptualizations of information behavior, the varied behaviors and decisions made by people as they select information sources will remain poorly understood. Information services and products based on this limited insight are destined to partial success only. Finally, significant research remains to be done into people’s daily life information behavior. Models of information behavior based primarily on studies of elite information users making information decisions in their workplaces are necessarily restricted in their theoretical validity and in their practical utility.

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