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Abstract

In today's fast-paced world, anecdotal evidence suggests that information tends to inundate people, and users of information systems want to find information quickly and conveniently. Empirical evidence for convenience as a critical factor is explored in the data from two multi-year, user studies projects funded by the Institute of Museum and Library Services. The theoretical framework for this understanding is founded in the concepts of *bounded rationality* and *rational choice theory*, with Savolainen's (2006) concept of *time as a context in information seeking*, as well as *gratification theory*, informing the emphasis on the seekers' time horizons. Convenience is a situational criterion in people's choices and actions during all stages of the information-seeking process. The concept of convenience can include their choice of an information source, their satisfaction with the source and its ease of use, and their time horizon in information seeking. The centrality of convenience is especially prevalent among the younger subjects ("millennials") in both studies, but also holds across all demographic categories—age, gender, academic role, or user or non-user of virtual reference services. These two studies further indicate that convenience is a factor for making choices in a variety of situations, including both academic information seeking and everyday-life information seeking, although it plays different roles in different situations.

1. Introduction

It can be argued that in the not-too-distant past, resources were scarce, and libraries were one of the only sources of trustworthy information. Users were obliged to conform to library practices and standards in order to successfully meet their information needs. Now, users' time and attention are scarce, while resources are abundant with the development of the Internet and Web-based services (blogs, chat, social media sites, etc.) and easily accessed, digitized content. This article provides an overview of findings from two multi-year grant-funded projects. These projects address the questions: "Why do people choose one information source instead of another?" and "What factors contribute to their selection of information sources?" Specifically, the emergence of the concept of *convenience* as a critical factor in information-seeking choices among a variety of different types of people, across a period of several years, and in a variety of contexts, is explored. Findings from several studies help to answer the question: How do aspects of convenience—including information source, ease of access and use, and time constraints—impact information seekers' choices and strategies in today's information climate?

The ways people decide to get information often are dependent upon the context of the information need. Context can be an academic or work setting, such as a class, office, factory, or personal setting, such as a home or coffee shop. The literature suggests that individuals will consult different sources and will use different forms of communication to meet their information needs, based upon the circumstance and their individual situation. Context and situation are sometimes used interchangeably in the information science (IS) literature (Cool,

2001). Savolainen (2006) suggested that time is a significant context in information seeking. Prabha, Connaway, Olszewski, and Jenkins (2007) reported that time can affect the thoroughness of information seeking, the sources accessed, and the mode of inquiry context, including situation.

Librarians are finding that they must compete with other, often more convenient, familiar, and easy-to-use information sources. The user once built workflows around the library systems and services, but now, increasingly, the library must build its services around user workflows. In the current information environment, there is anecdotal evidence that people will sacrifice content for the convenience of accessing information sources. There has been little documented evidence to support this assumption, however.

This paper investigates convenience as a major theme in different information-seeking behaviors by analyzing data from two multi-year IMLS-funded projects: *Sense-making the information confluence: The whys and hows of college and university user satisficing of information needs* (Connaway, Prabha, & Dickey, 2006; Dervin & Reinhard, 2006; Prabha, Connaway, & Dickey, 2006); and *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives* (Radford & Connaway, 2008). In the sense-making study, data from non-users of virtual reference services revealed factors—prominently including convenience—in the information-seeking behaviors of the subjects; the seeking synchronicity study compared data on the information behaviors of the millennial generation and the "Baby Boomers." Both studies especially highlighted the millennials' preference for Google and human sources for quick searches for information. A more focused examination of the data from the two projects for evidence of convenience-related findings informs the present investigation.

2. Literature review

The American Heritage Dictionary of the English Language (2000) defines convenience as "something that increases comfort or saves work." In terms of seeking information, aspects of convenience include familiarity with a resource, perceived ease of use, and physical proximity, although information-seeking studies to date have tended only to address convenience in passing. Bawden and Vilar (2006), for example, reviewed the literature on the ease of use of the Web and the difficulty of library systems, concluding that "Users believe that web search is fast and easy, providing immediate access to information and giving them what they want" (p. 349). In their IMLS-sponsored report on the use of libraries, museums, and the Internet, Griffiths and King (2008) stated that, for adult users, "The Internet is not always chosen because it is considered the best source (74% of occurrences), but is nearly always chosen because it is convenient or easy to use (93%) and to a lesser degree is chosen because it does not cost much in time or money (69%)" (p. 38). Convenience/ease of use was one of four main criteria adults used to choose information sources; others included the quality of the resource, the cost, and its trustworthiness (Griffiths & King, 2008). The Idaho Commission for Libraries engaged a research group to carry out state-wide focus groups with "digital natives" (Prensky, 2001). The Idaho Commission of Libraries report (2007) stated that both older and younger digital natives (12 to 25 years of age) agreed that the "Internet is a convenient way to access information at or through libraries." Sites associated with libraries were well-viewed by digital natives, and the library was seen as having the role of providing information through other media such as the Internet, although the Internet did not replace libraries (The Idaho Commission of Libraries, 2007 p. 47).

Lombardo and Condic (2001) investigated perceptions of and knowledge of online journal article databases by undergraduates. They found that users were not lazy when they relied on full-text articles; they were finding ways around the inconvenience of physically accessing print articles. Similarly, Agosto (2002) saw young people's choices to take the simplest approach to information gathering in terms of bounded rationality. Gross and Latham (2009), in reviewing undergraduate perceptions of information literacy, found that their subjects tended to define information literacy as product (getting information and easy outcomes) rather than as a process of learning. Pullinger (1999) reported on research that attempted to understand why users might have opted to use online resources instead of the physical library; results indicated that the users found libraries frustrating, and they tried to avoid going there. Problems cited in this study included limited hours, distance to the library, and the time that it took for library research (Pullinger, 1999). Fast and Campbell (2004) compared searching on libraries' online public access catalog (OPAC) and Web searching. Undergraduates and graduate students in their sample preferred using the Web, for reasons including time and effort required. Students found Web-searching fast and easy; there was an appealing simplicity (Fast & Campbell, 2004). Head and Eisenberg (2010) conducted focus group interviews and online surveys to identify "how and why students (enrolled at six different U.S. colleges) use Wikipedia during the course–related research process." The authors concluded that "Wikipedia meets the needs of college students because it offers a mixture of coverage, currency, convenience, and comprehensibility in a world where credibility is less of a given or an expectation from today's students." Antell and Engel (2006) surveyed university faculty and found that their physical age as well as "scholarly age" (i.e., time since last diploma) could affect use of physical library space. A more recent study of academic researchers reinforced the current "convenience, speed, and

interactivity of searching" within electronic environments (Niu, et al., 2010, p. 877). One of their minor themes focused on the convenience of the physical library. Younger scholarly users in this study identified somewhat more with physical libraries than expected.

3. Theoretical framework for convenience

Convenience is a situational criterion in people's choices and actions during the information-seeking process. The concept can include their choice of an information source, their satisfaction with the source and its ease of use, and their time horizon in information seeking. The theoretical framework for this understanding is founded in the tenets of *rational choice theory*, supported by Savolainen's (2006) concept of *time as a context in information seeking*, and *gratification theory*, informing the emphasis on the seekers' time horizons.

Much of rational choice theory developed in economics (Green, 2002); it posits that even the most complex social behavior may be viewed in terms of discrete and elementary individual actions. Individuals are seen as acting in their own self-interest in these individual actions—not necessarily acting towards achieving similar goals as other individuals, but according to their own "preferences, values or utilities" (Friedman & Hechter, 1998, p. 202); the assumed self-interest dictates that each individual choice among actions is rationally directed towards their own values.

Rational choice theory—and an extension of the theory known as "satisficing"—have been applied to a number of disciplines in the social sciences, and recently appeared in information science (Agosto, 2002; Prabha, et al., 2007; Connaway, 2007). Prabha and her colleagues explored how rational choices during information seeking led to satisficing behavior, which they defined as, "a judgment that the information is good enough to satisfy a need even

though the full cost-benefit analysis was not performed" (p. 76). Satisficing refines rational choice theory in that it acknowledges that in reality, people make individual choices without considering all possible rational options (Simon, 1955). The concept of "strategic satisficing" was introduced by Warwick, Rimmer, Blandford, Gow, and Buchanan (2009) who noted that their subjects "used the expertise that they had, by now, gained in information seeking to create time-saving strategies to complete the coursework with minimum effort" (p. 2409). Students were observed to choose both sources and strategies within a well-known comfort zone in information seeking. Convenience in these studies may act as a criterion in choosing information sources or strategies, and in judging their ease of use.

Similarly, gratification theory developed elsewhere in the social sciences, specifically in research about the social world of the economically disadvantaged. Chatman (1991) applied it to information-seeking behavior in this population. Specifically, she used the "prevailing finding . . . that poor people seek immediate gratification because of behavioral characteristics not found in other classes. That is, because they are more inclined toward quick arousal, pleasure, or excitement, and they engage in activities that result in instantaneous pay-offs" (p. 442). The issue of her subjects' narrow time horizon was a major contextual factor in their approach to information seeking (see also Dervin, 1977; Dervin & Nilan, 1986). In information seeking, gratification theory finds that, at least for poorer subjects, information sources must be easily accessible, and respond to an immediate concern in a timely fashion. This introduction of time as a contextual factor in information seeking is the principal contribution of gratification theory to this framework for understanding convenience in information seeking.

Savolainen's (1995) work in the area of everyday-life information seeking (ELIS) also emphasized the importance of time as a contextual factor. If "time is a scarce resource for

information seekers . . . the time available for information seeking usually permits people to access and use only a limited set of information sources" (Savolainen, 2006, p. 116). Broadly speaking, then, in ELIS, Savolainen found that time factors acted as a situational constraint on information seekers, which should cause them to prefer sources that are easy to use and convenient to access. He concluded this study by calling for more "conceptual studies clarifying the nature of temporal or more broadly, spatiotemporal factors as contextual qualifiers of information seeking" (p. 124). "Limited time horizons in everyday life tend to restrict information seeking" (p. 114), but the library and information science field lacks empirical studies of the phenomenon.

Savolainen later (2008) reported on time and access-related factors in an empirical study of ELIS. Here he specifically connected the subjects' time constraints with the convenience and speed of information sources: Both "availability and accessibility of information" and situational factors such as "lack of time" affected subjects' choice of information sources (Savolainen, 2008, pp. 90-91). "Ease and speed of use" and "quick to contact/access/convenient" were identified as major factors in similar studies (Julien & Michels, 2004; Fisher, Naumer, Durrance, Stromski, & Christiansen, 2006).

Thus, aspects of convenience including choice of source ease of access and use, and time factors can be central contextual limiters in information seeking. This centrality was borne out by the data from the two projects analyzed here, and has not changed over time: the sense-making data were collected beginning in 2003, and are supported by data from the seeking synchronicity project gathered in 2007 to 2008. The importance of convenience as a situational factor was relatively constant across demographic boundaries, as well—between these two studies, a wide variety of information behaviors were observed and reported. Though both gratification theory

and ELIS have demonstrated limited application of time factors to information seeking (economic limitations for the former and everyday-life context for the latter), the two projects addressed here support a wider application of time as a contextual criterion.

4. Data collection

In the sense-making study, (Connaway et al., 2006; Dervin, & Reinhard, 2006; Prabha et al., 2006) investigators studied the information-seeking behaviors of faculty, undergraduates, and graduate students from a sample of 44 colleges and universities from a Midwestern region in the U.S. over a period of three years. In Phase II of the research (Phase I had been exploratory), 307 randomly-sampled subjects responded to an online survey and telephone interview follow-up. The subjects provided data regarding five situations of their information seeking ($n = 1522$ informants-in-situation). The data were collected from March to May of 2004. In Phase III, 78 subjects completed sense-making focus group interviews, and a subset of 15 focus group participants were randomly selected to follow up with individual semi-structured interviews in Phase IV. These phases of data collection took place in the first half of 2005. The research intended to illuminate the information-seeking "hows" (moment-to-moment activities and practices) and "whys" (rational choices and criteria for them), with emphasis on the richest possible context for each individual choice. Although the sense-making study only included academic respondents, they were also asked questions pertaining to their information-seeking behaviors in personal situations.

Prior analysis of these data included extensive coding of the survey responses according to sense-making concepts (Dervin & Reinhard, 2006), analysis of the focus group and interview data in terms of satisficing of information needs (Simon 1955, 1979; Prabha et al., 2007), and

parsing the focus group and interview data by generation (millennials and Baby Boomers; see Connaway, Radford, Dickey, Williams, & Confer, 2008). For the present study, all data were re-examined for respondents' use of terms such as "convenience," "convenient," "fast/easy/ quick," or for indications that a specific rational choice saved them time in the process. These categories emerged from the above theoretical framework.

The seeking synchronicity project studied the needs, behaviors, and impressions of users, non-users, and librarian providers of virtual reference services (VRS) (Radford & Connaway, 2008). The respondents for this study included both academics and the general public. Both user and non-user data is included in this discussion. Phase I of the project (early 2006) incorporated eight exploratory focus group interviews; Phase II examined a random sample of actual VRS transcripts. In the third phase (June 2007 to March 2008), members of each population (see Table 1 below) responded to online surveys, which included both quantitative data (comparisons such as, "Which mode of reference service is most efficient?" and Likert scale questions) and qualitative data (open-ended discussions about positive and negative experiences with reference services). In Phase IV (September 2007 to March 2008), telephone interviews were conducted with VRS users and non-users, and results were transcribed and analyzed for themes emerging from the data. Convenience was first explored as a factor in these data by Connaway, Radford, and Dickey (2008) and Connaway et al. (2008).

For the present analysis, a wide variety of quantitative and qualitative questions that evinced data on convenience, ease of access and use, and time as a context in individual decisions, were considered. These categories of data also emerged from the theoretical framework. Since the specific form of data varied from phase to phase in each project, the

complete investigation of these findings regarding convenience are presented in the order they were collected, then discussed thematically.

5. Findings

5.1 Sense-making Phase II – Online surveys

Convenience, including issues of resource choice, ease of access/use, and time factors, permeated the data in each phase of both research projects about how different individuals made choices in their information seeking. In the second phase of the sense-making project, the final IMLS report stated that, "Situation . . . was by far the best predictor across all information seeking and uses measures" (Dervin & Reinhard, 2006, p. ES-3); situation in this case included questions addressing convenience, such as access to information late at night, or in a desperate need for quick answers. "Under some conditions, the idea of options of any kind is alien to users. They grab whatever is quickest and easiest. Under other conditions, they reach for more but have an acute awareness of the exigencies of life-facing" (p. ES-4). Even the analysis based on sense-making terminology notes that 74.5% of situations in these data were focused in the "present horizon" of time (p. ES-30).

The rather narrow terminology selected for assigning convenience codes ("convenience," "convenient," "easy," "quick," "fast," and various words for saving time) to the qualitative survey responses nevertheless resulted in a large number of results in which convenience was an issue in the respondents' own words. Out of a total 307 ($n = 307$) respondents, 171 used one or more of these phrases, for a total of 285 ($n = 285$) occurrences (see Table 2). All three study populations, faculty, graduate students, and undergraduates, used convenience-phrases, though the use was most heavily concentrated in the graduate student population. Convenience seemed to be more of an issue with these academic library users in research-related situations (the

second, fourth, and fifth questions on the survey; see Appendix 1) than in more personal situations. This runs contrary to the expectations of time constraints in ELIS. See Table 3 for a breakdown of the analysis of convenience-phrases by situation.

When the survey questions or telephone follow-up delved into the information sources that respondents used in each situation, convenience most often appeared as a factor when they were making choices to use Internet search engines, electronic databases, or the college/university libraries. Far more often, when they answered that a particular source helped their information search, they mentioned its convenience. Furthermore, some of the times that they claimed that a source hindered their information search, lack of convenience or time-saving was noted as part of the problem. These findings held across the three populations under study, though faculty were moderately more positive in their assessment of databases' convenience than the two types of student, who both favored search engines. In each case, convenience affected individual choices in a specific situation. See Table 4 for an analysis of online survey data for convenient information sources, and Table 5 for online survey data for convenient information sources by population.

5.2 Sense-making Phase III – Focus group interviews

Eight focus group interviews (two groups of graduate students and three each of undergraduates and faculty) were organized around four specific kinds of information-seeking situations. Since the participants had free rein in their responses otherwise, the data are less quantifiable (see Appendix 2 for the complete focus group interview questions). Regardless of academic rank, however, convenience still emerged as a major contributing factor in individual choices of which information strategies or resources to use. This response was especially true for the first question in the focus group interviews: "Think of a time when you had a situation where

you needed answers or solutions and you did a quick search and made do with it. You knew there were other sources but you decided not to use them. Please include sources such as friends, family, professors, colleagues, etc."

Participants in the nine focus group interviews centered their discussion of this question on different kinds of information sources, but made their decisions for a quick search based on the convenience of the source; clearly the question carried implicit temporal constraints. Undergraduates tended to discuss only web-based sources in this instance, with a heavy reliance on Google in particular. Graduate students also cited Google as being quick and easy; one commented, "Google, I don't have to know, I go to one spot" (FG-6).At the same time, if they were unable to locate an Internet source for their quick search, they used the library as a convenient repository of information ("Even with the library, it's start with the imminent. I use the online resources. If I can avoid a physical trip to the library . . . I'll avoid it" FG-6). Faculty most often cited the convenience of their personal home or office library as the most often-used place to find quick information, though many of them also spoke about Google or colleagues: "If I just have a quick thing, and I just want an answer, I will call a colleague that has some expertise. . . . Instead of looking up all the different papers of all the different methods . . . call them up. It's much faster" (FG-5).

Later in each focus group interview, the participants were asked, "Have there been times when you did not use a library (university/college, public, etc.) and used other source(s) instead?" In the case of this second question, the three academic groups did display somewhat different kinds of information behaviors, but convenience, including temporal contexts in both ELIS and academic situations, again factored into their responses. In this instance, undergraduates offered specific criticisms of the library catalog as difficult to use, though they

claimed they would use online reserves from the library, but after the library closes, which is a clear convenience choice. They and graduate students both commented with some frequency on how easy the Internet is to use, especially in comparison to library systems: "I don't go into the [library] system unless I have to because there's like 15 logins, you have to get into the research databases. Then it takes you out of that to [the local consortium] . . . " (FG-6). Graduate students in one focus group interview provided further data regarding their perceptions of the convenience of online books ("And plus they don't get overdue!" FG-8). Faculty again mentioned Web searches as easy to use, though these searches often led them to the library for authoritative and credible information, an evaluation they made in spite of convenience factors.

The third question posed to each focus group participant was, "Think of an academic situation where you needed answers or solutions and you did a thorough search (you did not take the first answer that you found). Describe the situation." In response to this more thorough research question, undergraduates continued to cite Google and Amazon as frequent, easy-to-use, and convenient. Use of library systems was mediated by considerations of convenience, as exemplified by the comment, "I use [the local union catalog], but I don't really need to come into a library, as long as I have a computer at home," which described a choice of information source based upon ease of access. One undergraduate cited the difficulty of the library OPAC, claiming the best process was to discover works on Amazon and paste them more conveniently into the OPAC to find the location of the item, or into their work. Undergraduates' views were probed to determine when they considered they had enough information; quite often temporal considerations directly impacted their answers (". . . time is a big factor for me, at least like if depending on how much time I have to do the project or how long I wait to start it depends on how thorough it will be and how much time I'll spend on it," FG-2; "I've always thought that the

library was a good source if you have a few months to spend on a paper" FG-7). Once again, graduate students indicated that some of their choices were influenced by considerations of convenience. Specifically, they credited e-books and interlibrary loans as time-saving services. Faculty, whose professional lives are bound up with saturation research on topics, had little to offer to the discussion of convenience for this question.

Finally, the participants were asked to imagine an ideal information system, created with a magic wand. Several comments from each population spoke to the convenience to which they would aspire. Ideas from undergraduates included the ability to use keyword searching in all books (which Google Books is working toward), a universal library catalog for all libraries, reference staff that conveniently rove about the library (". . . where they have people who walk around and are there available to help you not always just confined behind a desk where you have to go up and they're like, well if you take a left after that bookcase then a right" FG-2), federated search in databases, which spoke to both time saving and ease of use, and better hyperlinks. Graduate students desired better book and journal delivery systems, presumably for the convenience of receiving materials in their office ("But other times, it says you have to actually go get the article, and I do a lot of research under a lot of supervisors and stuff. So it's such a drag" FG-6). Faculty mentioned selective alerts for new information in their field, termed *Selective Dissemination of Information* (SDI) in information science. Although the respondents did not use the technical term, they described the service (". . . a constant perusing of what's available and if something is new that gets a hit, it's automatically directed to us whether we ask for it or not" FG-1), as well as virtual reference services available from their computer ("Something that I really liked about our website, was the ask a librarian icon" FG-9).

5.3. Sense-making Phase IV – Semi-structured interviews

The final phase of data collection in this project involved semi-structured interviews with a small subset of previous study participants: five undergraduates, four graduate students, and six faculty members. The interviews took place in natural environments such as an office, home, or dormitory. Since four of the five questions (see Appendix 3) involved relatively intense academic work, convenience was not a major factor explicit in many participants' discussion of their information-seeking processes (see Table 6; note that evidence of satisficing had emerged from earlier grounded analysis of these data, Prabha et al., 2007). In the case of the fifth situation, "Now, please take me on a tour of your favorite website where you get answers to questions that interest you. . . . Help me understand what makes this site helpful when others are not. Show me, if you can, examples of non-helpful sites," convenience became much more germane to the respondents (*n* = 13).

Once again in these data, the respondents valued convenience both of access ("Mostly I use the Internet for things like this because it's convenient. Since I work at the computer all the time, it's right there so, you know, when I have a few extra minutes I'll just type in a search and find information and print it out if I need to," subject #2) and of time ("I would do everything if not electronically, then somehow vacuum it to someone so they get it immediately," subject #9). Interestingly, one respondent even brought the concept of the convenience of books into this website-specific question: "I like to have the piles of books all around me so I can just grab from each place and start writing my paper or whatever I'm doing" (subject #2).

5.4 Seeking synchronicity Phase III – Online surveys

Three years after the data were collected for the sense-making project, analysis of the seeking synchronicity research revealed a remarkably similar highlighting of convenience factors

in information-seeking behaviors. The data once again revealed evidence of both rational choices being made between information sources based upon their convenience of access, and temporal factors impacting choices in both ELIS and more academic information seeking. The third phase of the seeking synchronicity project (online surveys) had a more narrow focus on librarian-provided reference services. Two of the three populations under study were users of live chat virtual reference services (VRS), and non-users of VRS, who were asked questions regarding their use of other modes of library reference service. Convenience was a major factor in both VRS users' and non-users' individual decisions and choices in their information seeking.

Convenience factors scored uniformly high among both users (n =137, see Table 7, below) and non-users (n =184, see Table 9 below). In many cases, the "frequent" users of VRS (n =59), defined for this purpose as respondents who reported using virtual reference four to six times or more, rated convenience even higher than less frequent users as a reason for using the service. Users, and especially frequent users, rated the chat medium as the "most efficient" of all reference modes, and rated the "convenience of my access" to VRS as excellent or very good. When asked to rate different factors that affect their decision to use VRS, 95% of users (100% of frequent users) cited convenience directly. Needs for information late at night or on the weekend, at times when the subject could not get to a library, or when there was a "desperate need for quick answers" (the most obvious example of contextual time factors) also rated highly as a factor. "Immediate answers" and "convenience" were among the most highly rated specific features valued in VRS. Finally, time issues play into the users' complaints with the service—a slow Internet connection or slow response time on the part of the library would tend to discourage them from using VRS, and many suggested faster software as a desirable improvement. See Table 7 for an analysis of convenience as a factor for VRS users.

The documented centrality of convenience in the information seeking of VRS users was sustained across most demographic categories, though a very small number of significant differences emerged. The data across three age groups—12 to 18, 19 to 28, and 29 and older—were subjected to statistical Analysis of Variance (ANOVA) with a confidence level of $\alpha = .05$ (see Table 8). The youngest cohort of respondents was more likely to express a "desperate need for quick answers" than the oldest, and also more likely to request faster software. The middle cohort was more likely to be discouraged by a slow Internet connection, but these differences by age categories were not statistically significant. Two survey questions elicited significant differences by respondents' location (e.g., rural, suburban, or urban). Suburbanites were much less likely to rate chat as the most efficient format for reference services (47%, with 56% voting for face-to-face) than respondents from urban areas (68% for chat). Similarly, those identifying as suburban were less likely to rate the convenience of their access to reference help (78% calling their access excellent or very good) as highly as urbanites (97% excellent or very good). In each case, the number of rural respondents was too low for significant results.

Likewise, among the non-users of VRS (these individuals did use libraries, they just did not use live chat VRS) surveyed, convenience emerged as a factor in choices in their library information seeking. When responding to a question about the convenience of their access to face-to-face (FtF) reference services, almost half rated it excellent or very good (a much less enthusiastic endorsement than the 95% of VRS users who rated the convenience of VRS excellent or very good). When asked about the convenience of their preferred mode of obtaining reference assistance, however, a large majority cited its convenience. Most of these choices apparently involve satisficing, in that the users were making convenient choices to maximize their personal benefit. For those who preferred reference services by telephone or e-mail, both

physical and temporal convenience played a negative role in their choice not to use a library, and the fear that "Chat reference might not be offered at times I need the service" was a significant deterrent expressed as a reason these non-users had not tried VRS. See Table 9 for an analysis of convenience as a factor for non-users of VRS. Demographic differences among these data were negligible.

5.5 Seeking synchronicity Phase IV - Telephone interviews

The majority of the transcript data from the Phase IV telephone interviews (see Appendix 4 for the interview questions) were individually coded according to the principles of *grounded theory* (Glaser & Strauss, 1967; Strauss & Corbin, 1998), allowing the codes to emerge from the respondents' language. Thus, the overall percentages for the occurrence of any single data point would be smaller than survey responses, when subjects were prompted by the question language. Nevertheless, codes related to convenience, including physical convenience (choice of source and access) and temporal factors, emerged in response to several different interview questions for both the VRS users and non-users. In the following discussion and tables, code names are as assigned by researchers to each set of transcripts as they emerged from the data.

Convenience-related codes emerged from four questions in the telephone interviews with VRS users (see Table 10). The most important question for users' thoughts about convenience was the question of whether the users would recommend VRS to others (they overwhelmingly would—89%) and why. See Appendix 4 for telephone interview questions. One-third (32%) of those interviewed made positive comments on the speed and efficiency of VRS, and 32% made some reference to its convenience, including availability after hours, and getting answers in the online workflow. The same two aspects of their experience with VRS also emerged in their responses to a question probing for the kind of situation when chat was their first choice of mode

for obtaining reference services (question 3). In this case, specific aspects of convenience included after-hours need, online workflow, and being at a home or office.

One negative type of data emerged from a question asking VRS users how much time they might wait to get virtual answers from a subject specialist. Despite a majority of respondents indicating that subject expertise was very important to them, only 42% would be willing to wait for that expertise, and very few of them could quantify a specific amount of time to wait. Finally, near the end of each interview. VRS users were asked to compare their experiences of working with a librarian FtF and in the virtual space, with justification for their response. Many did not indicate a clear preference, though among those respondents, several again mentioned the convenience and immediacy of the chat medium, and a few expressed a negative opinion of FtF reference (". . . the convenience is still better online than in person, you don't have to make trips to the library," User Telephone Interview #24). Among the respondents who indicated a preference for VRS, even more (41%) expressed the convenience of VRS in a positive light, and the lack of convenience in FtF as negative (15%). Demographic differences in these data were negligible.

Responses by VRS non-users to four questions in their telephone interviews also provided data related to convenience as a major factor in their information seeking choices (see Table 11 for results, and Appendix 4 for the complete interview questions). When asked in the most general sense to "Think about a time you needed to know something", a large majority (62%) responded that they would find the information themselves, making the potentially time-saving choice to avoid any mediation in their information seeking. Almost all of the remaining interviewees (with some overlap to the "find it myself" answer) responded with some form of electronic resource (33% cite the Internet, 15% Google, 5% Wikipedia). Although the

respondents did not explicitly cite convenience as a criterion in their choice, it was implicitly included in their responses. Similarly, when asked to consider times when they chose an alternative to the library (question 3), the largest number of respondents mentioned the Internet as a resource, with numerous references to specific online (and implicitly more convenient) resources.

When asked to hypothesize about what might convince them to try asking a librarian for help using a chat reference service, the single greatest factor was some form of convenience ("It would be convenient, because if I was sitting at a computer and I could ask a question and they would answer immediately . . . that would be good. . . . Convenience is why I do something as opposed to something else" N-131). This result included a large number of respondents who could foresee an immediate need for answers, those who would value using VRS from home in a variety of circumstances, and those who would use the service at a time that was after library hours. Finally, in the follow-up to a question about the non-users' experience using electronic formats for personal and academic or professional purposes, the VRS non-users were asked to give some reasons for their use. Although they could answer about any topic or aspect of information seeking, convenience emerged in a few cases. As with the VRS users in the telephone interviews, significant demographic differences were not present.

6. Discussion

Between the two studies, empirical data identifies convenience as central to information-seeking behaviors. The centrality of convenience is especially prevalent among the millennial subjects in both studies, but is true across all demographic categories—age, gender, academic role, and user or non-user of VRS.

These two studies indicate that convenience is a factor for making choices in all situations, both academic information seeking and in ELIS (though it plays different roles in different situations). The subjects' consideration of the convenience of their sources exemplifies the theory of rational choice. The study data on convenience come from both prompted survey response language, and from free-response data in interviews and critical incident data (responses regarding subjects' memories of a single successful or unsuccessful incident; see Flanagan, 1954). Most importantly, the data on convenience are consistent across the longitudinal period between the two studies, indicating that the need for convenience is not new.

Convenience emerges from the data around three particular aspects of the concept. First, the subjects were observed to make choices among various information sources according to rational choice theory, and specifically satisfying their information needs to quickly select sources whose convenience made them "good enough." Different contexts and situations for information needs did not detract from the centrality of convenience in making choices between specific resources, though the convenience factor operated differently depending on context. Students faced with lengthy imposed academic tasks, as well as professional scholars, valued the most convenient access to the library's resources, but acknowledged that their more detailed academic tasks would be more involved. In the sense-making study, convenience emerged as even more important to the subjects' discussion of academic tasks than to their discussion of ELIS. Convenience, in this case more often associated with speed of electronic search engines, remained important, however, in the more immediate everyday-life situations, which also was reported in the seeking synchronicity study. Convenience was a leading feature every time VRS users were asked in surveys and interviews to evaluate reasons for choosing one service over another kind of information resource, and for recommending it to others.

Ease of access to resources is a second measure of convenience when making rational choices in information seeking, and when demonstrating satisficing behaviors, which are somewhat more expedient than purely rational choices. The most convenient sources of information might be Internet search engines, electronic databases, virtual reference, or online e-reserves, e-books, and online booksellers; findings indicate that Google is especially important to the younger generations. In addition to electronic resources that carry the convenience of desktop or home access, however, data emerged about the convenience of human resources as information sources, as well as the convenience of having a personal library on hand. Convenience is a factor when making choices to use or not to use the physical library or when determining how to access library resources after hours or on the weekend. Convenience as expressed in ease of access was a repeated complaint made about library OPACs in sense-making. This finding was reiterated in the seeking synchronicity study of VRS. The magic wand enhancements to library systems in the sense-making study differed depending on the academic role of the participant, but they tended to relate to convenience of access to resources.

Finally, the data in both studies explored time as an important situational factor in convenience choices. This aspect of convenience was predicted by Savolainen's (1995) ELIS and by gratification theory, although in gratification theory, convenience had been limited to the information behaviors of poor people. The time-span of longer academic tasks featured in the satisficing behavior of the sense-making study's academic users, as well as the responses from the seeking synchronicity respondents describing their use of VRS for academic tasks, established temporal factors as active beyond ELIS. In both studies, the temporal context of an information need might also relate to library hours, for example in experiencing an information need late at night, or on weekends. The seeking synchronicity study particularly illuminated the

kind of information need expressed as a "desperate need for immediate answers." Such highly time-oriented information needs were most often expressed by younger subjects, but featured in all demographic categories.

These strong empirical findings regarding convenience achieve further support in a wider synthesis of the state of user studies research published as a Joint Information Systems Committee report (Connaway & Dickey, 2010). Convenience in the present theoretical framework permeates the data from 12 recent, publically-funded, and large-scale user studies as synthesized in that report. Two broad-based surveys of the information landscape conducted by OCLC (De Rosa, 2005, 2006) found that 84% of all users made the rational choice to begin their information search with a search engine, and 90% found search engines a "perfect" or "good" fit for their lifestyle (De Rosa, 2005); the younger college students were found to choose the library less frequently since they began using the Internet (De Rosa, 2006).

Several studies conducted in Great Britain further reinforce the centrality of convenient information resources, ease of access, and time constraints on information seeking. One study of professional, postdoctoral researchers specifically highlighted the finding that researchers have become "accustomed to getting resources directly on their desktop from anywhere in the world" (Research Information Network, 2006, p. 11), the personal computer being the most convenient point of access for them. A further study of more than 2,250 researchers and 300 librarians reiterated the importance of desktop access, and added the finding that the researchers use a kind of satisficing behavior in not wanting to spend a lot of time locating a resource (Consortium of University Research Libraries, 2007). One study of the "Researcher of the Future" concluded that the younger generations especially demand "24/7 access, instant gratification at a click, and . . . 'the answer'" (Centre for Information Behaviour and Evaluation of Research, 2008, p. 11).

Finally, two explorations of e-resource usage also contained key findings regarding the short amount of time users spend viewing downloaded e-journals (Research Information Network, 2009), and the importance of 24/7 access for all types of electronic resources (Research Information Network , 2009; JISC and University College London, 2009).

7. Implications for practice

The image of libraries as a quiet place to access books, rather than electronic sources, is still prevalent today (Connaway & Dickey, 2010). In order to entice people to use libraries and to change their perceptions of libraries, the library experience needs to become more like that available on the Web (e.g., Google, Amazon.com, iTunes) and to be embedded in individual workflows. The Web environment is familiar to users, therefore, they are comfortable and confident in making the choice to search for information there. One recommendation that can be seen to follow from these results is that librarians need to adapt or seek to purchase services and systems that are designed to replicate the Web environment so that the systems are perceived as convenient and easy to use.

Information-seekers frequently defined convenience as complete access to resources, beyond merely discovering and identifying them. People lack the patience and the time to wade through separate lists and groupings of library content and different indexing and abstracting databases. They expect seamless access to resources such as full text e-journals, online foreign-language materials, e-books, a variety of electronic publishers' platforms, and virtual reference desk services (Connaway & Dickey, 2010). To meet these expectations, it is recommended that librarians provide more digital sources that are authoritative and reliable through the library systems and services, from e-journals to curated data sets, as well as emerging services such as

virtual research environments (VREs), open-source materials, non-text-based and multimedia objects, and blogs.

Librarians also should advertise the library brand and its resources better to academics, researchers, students, and the general public. Demonstrating the library's value can be accomplished by identifying and promoting collections and services. One size does not fit all for library services, which need to be offered in multiple delivery modes to meet the different information needs of users in different situations. This versatility and flexibility is difficult in the current economic environment, but warrants further investigation.

The development of an economic model for the allocation of resources for the different delivery modes for library services would benefit all types of libraries. This model would not only enable optimal scheduling of human resources for services, but also the allocation of funds for both electronic and print resources, based on user preferences.

8. Conclusion

There is a need for further study of user behaviors to address how library users find information in different contexts and situations. Vakkari (1997) calls for "studies which will concentrate more on contextual factors, and then combine the results with those of studies using more individual factors" (p. 463). An approach like this would provide theoretical research that combines both the individual and social factors that influence information-seeking behaviors (Connaway & Dickey, 2010), and that further investigates how convenience influences information seekers' rational choices in both ELIS and other situations.

As seen above, in some situations information seekers will readily sacrifice content for convenience. Convenience is thus one of the primary criteria used for making choices during the

information-seeking process. Convenience includes the choice of the information source (is it readily accessible online or in print), the satisfaction with the source (does it contain the needed information and is it easy to use), and the time it will take to access and use the information source. In the current environment, most people do not have time to spend searching for information or learning how to use a new information source or access method. In order to be one of the first choices for information, library systems and interfaces need to look familiar to people by resembling popular Web interfaces, and library services need to be easily accessible and require little or no training to use. Convenience is a critical factor for users across all demographic categories, and is liable to remain so going forward.

Acknowledgements

TABLES

Table 1: Seeking Synchronicity Phase III – Online Surveys and Phase IV – Telephone Interviews, Demographics of VRS users and non-users

Data Collection Phases	Demographic Breakdown
VRS users' online survey (N=137)	62% female 78% Caucasian 63% suburban 64% age 29+
VRS non-users' online survey (N=184)	68% female 72% Caucasian 58% suburban 33% 12-18; 33% 19-28; 33% 29+
VRS users' telephone interviews (N=76)	74% female 80% Caucasian 63% suburban 71% age 29+
VRS non-users' telephone interviews (N=107)	66% female 70% Caucasian 55% suburban 48% age 19-28

Table 2: Sense-Making Phase II – Online Survey respondents using convenience phrases

Rank	# responding with convenience phrases
Faculty	36
Graduate student	76
Undergraduate student	59
TOTAL:	171

Table 3: Sense-Making Phase II – Online Survey situations eliciting convenience phrases

Survey Question	# of convenience phrases
Q1: Troublesome situation in university life	39
Q2: Situation specifically involving research	83
Q3: Troublesome situation in life outside university	11
Q4: Situation in university life where you used electronic resources	88
Q5: Situation in life outside university where you used electronic resources	64
TOTAL:	285

Table 4: Sense-Making Phase II – Online Survey convenient information sources

Information sources used (from a list provided in the survey)	Convenience phrases	Convenience phrases where source helped	Convenience phrases where source did not help
Internet search engine	56	52	4
Electronic databases	48	44	1
College or university libraries	17	12	5
Library catalogs	8	6	2
Own observations	6	5	1
Journal articles	6	4	2
Students, classmates	5	5	0
Public libraries	5	2	3
Newspapers	5	2	3
Government agencies	4	3	1
Personal web pages	3	3	0
Web diaries, blogs	3	3	0
Reference books	3	1	2
Professors, teachers	2	2	0
Family, friends	3	1	2
Museums	2	1	1
Internet chat rooms	3	2	0
Other non-fiction books	2	0	2
Co-workers, colleagues	1	1	0
Other professionals	1	1	1

Table 5: Sense-Making Phase II – Online Survey top convenient information sources by population.

Information sources used (from a list provided in the survey)	Convenience phrases	Convenience phrases where source helped	Convenience phrases where source did not help
Faculty			
Electronic databases	12	12	0
Search engines	10	9	1
Library catalogs	2	2	0
College, university libraries	0	0	0
Graduate students			
Search engines	31	31	0
Electronic databases	16	12	1
College, university libraries	5	4	1
Library catalogs	5	3	2
Undergraduates			
Search engines	15	12	3
Electronic databases	11	9	0
College, university libraries	8	5	3
Library catalogs	1	1	0

Table 6: Sense-Making: Phase IV - Semi-structured Interview respondents citing convenience

Situation	Respondents citing convenience (N=15)	Times convenience is cited
Q1: Writing an academic paper, proposal, or class assignment	2	2
Q2: Work on a current paper, assignment, or scholarly task	4	5
Q3: Work on a current paper, assignment, or scholarly task using electronic resources	5	7
Q4: Repetitive situation in life requiring repeating seeking of electronic inputs	5	6
Q5: Tour of favorite website	9	15

Table 7: Seeking Synchronicity Phase III – Online Survey VRS user respondents citing convenience as a factor in information seeking

VRS users:	All survey respondents N=137	Frequent VRS users N=59
Comparing users' experience among formats, 2.2 The format that is most efficient is:	55% chat	66% chat
Comparing specific aspects of chat, 3.5 The convenience of my access to reference help is:	85% excellent or very good	86% excellent or very good
What factors are important to you when choosing VRS?		
4.2 Chat reference is convenient:	95% very important or important	100% very important or important
4.15 I needed reference help late at night or on the weekend:	74% very important or important	78% very important or important
4.16 I had a desperate need for quick answers:	72% very important or important	78% very important or important
4.17 I could not get to the library:	73% very important or important	78% very important or important
What factors are important to you when choosing other formats?		
5.1 The library is convenient:	76% very important or important	81% very important or important
5.2 Other formats are convenient:	78% very important or important	80% very important or important
What specific features are important to you in VRS?		
6.1 Immediate answers:	89% very important or important	92% very important or important
6.2 Convenience:	97% very important or important	98% very important or important
What items might discourage you from using VRS?		
7.2 Slow Internet connection:	69% strongly agree or agree	64% strongly agree or agree
7.15 Slow response time:	57% strongly agree or agree	58% strongly agree or agree
What might improve your experience? 8.4 Faster software:	87% very important or important	75% very important or important

Table 8: Seeking Synchronicity Phase III – Online Survey VRS users, age differences.

Question	12-18	19-28	29+
VRS Users	**N=26**	**N=23**	**N=88**
Comparing experience among formats,			
2.2 The format that is most efficient is:	58% chat	56% chat	55% FtF; 24% chat
What factors are important to you when choosing VRS?			
4.16 I had a desperate need for quick answers:	92% very important or important	70% very important or important	66% very important or important
What items might discourage you from using VRS?			
7.2 Slow Internet connection:	52% strongly agree or agree	96% very important or important	64% very important or important
What might improve your experience?			
8.4 Faster software:	96% very important or important	70% very important or important	74% very important or important

No statistically significant differences α=.05

Table 9: Seeking Synchronicity Phase III – Online Survey VRS users, geographical differences

Question	Rural	Suburban	Urban
VRS Users	**N=13**	**N=85**	**N=38**
Comparing experience among formats,			
2.2 The format that is most efficient is:	69% chat	**47% chat** (56% FtF)	68% chat
Comparing specific aspects of chat,			
3.5 The convenience of my access to reference help is:	92% excellent or very good	**78% excellent or very good**	97% excellent or very good

Significant differences α=.05

Table 10: Seeking Synchronicity Phase III – Online Survey VRS non-users respondents citing convenience as a factor in information seeking

VRS non-users:	*N=184*
Comparing specific aspects of FtF,	
3.5 The convenience of my access to reference help is:	45% excellent or very good
Reasons for not choosing chat:	
5.5 Chat reference might not be offered at times I need the service:	60% strongly agree or agree
Comparing specific features of other formats,	
(NB respondent pool then is divided by their preferred mode)	137 FtF/ 9 telephone/
I prefer: A. FtF B. telephone C. electronic formats	38 electronic formats
4.A1 The library is convenient (those preferring library):	84% very important or important
4.B1 The telephone is convenient (prefer telephone):	73% very important or important
4.C1 Electronic formats are convenient (prefer electronic):	91% very important or important
What might discourage you from using other formats?	
4.B9 The library is not convenient (prefer telephone):	57% strongly agree or agree
4.B10 The library is not open at convenient hours (prefer telephone):	59% strongly agree or agree
4.C16 The library is not convenient (prefer electronic):	67% strongly agree or agree
4.C17 The library is not open at convenient hours (prefer electronic):	70% strongly agree or agree

Table 11: Seeking Synchronicity Phase IV – Telephone Interviews VRS user comments about convenience

VRS users:	N=76
When recommending chat reference (question 10), they recommend based on:	
Speed and efficiency	32%
Convenience	32%
After-hours availability	7%
Getting answers in the online workflow	3%
When chat is first choice for information (question 3), they describe their reasons:	
Convenient	29%
Quick help-speedy answers	18%
After-hours, can't get to library	12%
Already at-in use of a computer	9%
Don't have to leave home-office	7%
Reliable information-sources	7%
Easier to go on-line	4%
How much time might you wait for a specialist (question 9)?	
Waiting only a specific amount of time	11%
Ten to fifteen minutes	4%
Half hour	3%
One to two hours	3%
Half a day	1%
In comparing chat to other formats (question 11),	
Positive immediacy-convenience-efficiency of VRS (prefer VRS)	14%
Positive Immediacy-convenience-efficiency of VRS (no clear preference)	11%
Negative immediacy-convenience-efficiency of FtF (prefer VRS)	5%
Negative immediacy-convenience-efficiency of FtF (no clear preference)	3%

Table 12: Seeking Synchronicity Phase IV – Telephone Interviews VRS non-user comments about convenience

VRS non-users:	N=107
Choices in an information source (question 2):	
Start with Internet (Internet first)	30%
Start with Google (Google first)	15%
Google	12%
Wikipedia	5%
Google Scholar	4%
Start with Wikipedia (Wikipedia first)	3%
Concerning alternatives to the library, and why (question 3),	
Alternative source is the Internet:	47%
Reason: personal convenience	**38%**
Reason: Inconvenience of the library	**25%**
Google	11%
Databases associated with Internet (EBSCO, LexisNexis, etc.)	6%
Google Scholar	3%
Wikipedia	3%
Expert web sites	3%
Yahoo!	2%
Reason: Internet as starting point	2%
Journals associated with Internet	1%
Online book sellers	1%
Possible reasons for trying chat include (question 6):	
Convenience	**61%**
Needing immediate answers	26%
Unable to get to the library	7%
Using the service after hours	7%
Perceiving chat reference as faster than email	4%
Valuing using chat reference from home	4%
Unable to telephone the library	4%
Citing general ease of use	2%
Experiencing bad weather	2%
Avoiding a long distance call	1%
Preferring chat to holding on the phone	1%
Reasons for using electronic communication formats (question 5):	
Convenience or speed	7%
Expectation of electronic formats' immediacy	6%
More convenient than in person	1%
Expecting electronic formats convenient to access	1%

APPENDICES

Appendix 1: Sense-Making Phase II – Online Survey questions for academic information seekers

Survey Question	Definition
Q1: Troublesome academic	A troublesome situation you faced in the past 6 months that involved university/college life in some way.
Q2: Scholarship, research	A situation that specifically involved research or scholarship such as writing a paper, preparing for a class, writing a proposal, developing an understanding, or executing something you created.
Q3: Troublesome personal	A troublesome situation you faced in the past 6 months that involved your life outside the university/college in some way.
Q4: Electronic use academic	A situation in your university/college life where you turned for most of your input to electronic resources, such as the web or email.
Q5: Electronic use personal	A situation in your life outside the university/college where you turned for most of your input to electronic sources, such as the web or email.

Appendix 2: Sense-Making Phase III - Focus Group Interview questions for academic information-seekers

1. Think of a time when you had a situation where you needed answers or solutions and you did a quick search and made do with it. You knew there were other sources but you decided not to use them. Please include sources such as friends, family, professors, colleagues, etc.

    [PROBES: Did you simply take the first answer/solution you were able to find? What was the situation? What sources did you use? What led you to use them...and not others? Did they help? How? What sources did you decide not to use? What led to this/these decisions? What did source A give you that you thought source B could not? Have there been situations where source B was a better choice for you?]

2. Have there been times when you did not use a library (university/college, public, etc.) and used other source(s) instead?

    [PROBES: How come? What led you to this use? Were there other alternative sources? Did you also use them? How come? Why not? Try to get participants to discuss experiences searching catalogs and abstracting and indexing databases. Ask questions: What did source A give you that the catalog and abstracting and indexing databases could not? Were there situations where the catalog or abstracting and indexing databases was a better choice for you? If the library was not used, explain what led you to use these sources instead of the library? [Try to find out who participants think provides the proprietary electronic sources and databases. Ask question: What affiliation/organization makes it possible for you to consult these sources?]

3. Think of an academic situation where you needed answers or solutions and you did a thorough search (you did not take the first answer that you found). Describe the situation.

    [PROBES: What was the situation? What explains in your mind why this search had to be thorough? What did you do? What sources did you use? What lead you to consult these sources (a source can be a person, a document, a catalog, etc.)? Did the source(s) help? How? If more than one source: What did source A give you that source B did not and vice versa?]

4. If you had a magic wand, what would your ideal information system and services provide? How would you go about using the systems and services? When? Where? How?

    [PROBES: Try to find out if it is the library systems, inconvenience of going to the library, etc. Ask: What changes would you make to the current library environment to make it better meet your needs?

Appendix 3: Sense-Making Phase IV - Semi-structured Interview questions for academic information seekers

Q1. Please recall for me step by step how you went about preparing to write your most recent academic paper, proposal, or class assignment. Tell me what you did first, second and so on. Include all the sources you consulted, if any -- family, friends, professors, colleagues (classmates) and any other sources of input such as books and journals and databases if you used them. If possible, list the sources on your steps in the order you consulted them.

Now looking back at all your decisions and the sources of input you consulted, help me understand what led you to choose certain sources and not others. ASK COMPARATIVE QUESTIONS: What was source _____ able to help you with that source _____ could not?

Q2.   Please select a repetitive situation in your life when you have had to find electronic inputs each time the repetitive situation arose? What happened and what explains the need to search each time? Please show me the web sites you have gone to and when and how you used them -- Why here first? What did you hope to find? Did you find it? Did it help? How? ASK COMPARATIVE QUESTIONS: What was source _____ able to help you with that source _____ could not?

Q3. Now, please take me on a tour of your favorite website where you get answers to questions that interest you. These questions can be of any kind -- your hobbies, for example; or your future plans; or your major interest. Once again, teach me how you use this website and how it helps you. Help me understand what makes this site helpful when others are not. Show me, if you can, examples of non-helpful sites.

Q4. Please select a paper, assignment, or scholarly task that is currently on your "to do" list. Walk me through, step by step, how you plan to undertake the task. As you walk me through your plans, help me understand what leads you to plan to consult certain sources and not others. ASK COMPARATIVE QUESTIONS: What was source _____ able to help you with that source _____ could not?

Q5. Please select, once again, a paper, assignment, or scholarly task that is on your "to do" list that you think will require consulting mainly electronic sources. Walk me through, step by step, how you plan to undertake the task. Again, help me understand what leads you to plan to consult certain sources and not others. ASK COMPARATIVE QUESTIONS: What was source _____ able to help you with that source _____ could not?

Appendix 4: Seeking Synchronicity Phase IV - Telephone Interview questions for VRS non-users

1. Have you ever interacted with a librarian in person, by phone, by e-mail, or by any other means?

    a. If yes, how would you characterize the experience(s)?

        i. If successful, what made the experience(s) successful?

            1. [If not mentioned, ask: were you comfortable interacting with the librarian?]

                a. Please tell me a little about the librarian whom you meet most often, i.e. demeanor, knowledge/ subject specialist, approachability, trust.

                b. Do you think the mode of communication (FtF, telephone, electronic, etc.) contributed to the success?

                    i. Why or why not?

        ii. If unsuccessful, what made the experience(s) unsuccessful?

            1. [If not mentioned, ask: were you uncomfortable interacting with the librarian?]

                a. Please tell me a little about the librarian whom you meet most often, i.e. demeanor, knowledge/ subject specialist, approachability, trust.

                b. Do you think the mode of communication (FtF, telephone, electronic) contributed to the unsuccessful experience?

                    i. Why or why not?

    b. If no, why haven't you interacted with a librarian?

        i. What might convince you to ask a librarian for help in the future?

2. Think about a time when you needed to know something. How did you go about getting what you needed?

    a. Probe: Did you use sources such as friends, family, professors, colleagues, librarians, etc.

    b. What led you to use these sources?

3. Have there been times when you made the choice not to use a library (university/ college, public, etc.) and used other source(s) instead?

    a. What led you to this choice?

    b. Where there other alternative sources? Did you also use them? How come? Why not?

4. Have there been times that you did choose to use a library (university/ college, public, etc.)?

   a. What led you to this choice?

   b. Where there other alternative sources? Did you also use them? How come? Why not?

5. Tell me about your experience using electronic formats (e-mail, text messaging, chat) for business, school, or personal communication.

   a. Have you ever used any of these formats to communicate with a librarian?

   b. If yes, what led you to this choice?

      i. [Probe for awareness of the chat reference service, i.e. marketing, promotion, visibility on the library web site, free, and technology issues, i.e. security, need to download software, etc.]

   c. If no, can you tell me why you did not choose to use them?

      i. [Probe for awareness of the chat reference service, i.e. marketing, promotion, visibility on the library web site, free, and technology issues, i.e. security, need to download software, etc.]

   d. How can you envision using these formats to communicate with a librarian?

   e. How might it be different to use one of more of these forms of communication with a librarian than with colleagues, family, and friends?

6. What might convince you to ask a librarian for help using a chat reference service? (Note: if they are unfamiliar with the idea of a chat reference service explain that this is when you use IM to ask a librarian a question).

7. What questions or comments about chat reference would you like to add before we end our conversation?

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