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This study examines the adherence to and departures from the prescribed pattern of reference transactions as established by the Research and User Services Association (RUSA) of the American Library Association. 300 chat reference transactions collected from the reference department of the Walter Royal Davis Library at the University of North Carolina at Chapel Hill were examined for patterns indicating the situations in which divergences in particular occurred and the nature of those divergences. This study reveals that these divergences, generally, stem from the text-based communication medium of chat reference, and certain adaptations, to account for this text-based medium, have been created instinctively by both librarians and library users.

Headings:

College and university libraries—reference services.

Reference and User Services Association

Reference services—automation

Reference services—evaluation

Reference interview—aims and objectives

Reference interview—evaluation

AN EXAMINATION OF ADHERENCE TO AND DEPARTURE FROM THE
REFERENCE AND USER SERVICES ASSOCIATION'S GUIDELINES FOR
REFERENCE TRANSACTIONS IN CHAT SERVICES INTERACTIONS

by
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Introduction

For many, one of the most familiar and alternately most satisfying and most frustrating library experiences is to come to a library desk with a question or a need. In other words, the best and the worst of the library are found in using the library as the librarians might hope one would. Over years of slow evolution, the library has formed itself into something between a warehouse and a workshop, and staffed itself with librarians who hone their knowledge of knowledge and how to find it to a fine edge. The expectation, then, is that any person who comes into the library and does not know how to find the answers to his questions will consult with one of the librarians, as one might consult any other sort of professional in a particular field. To put it poetically, librarians could be called the doctors of questions, answering an ache for an answer as a doctor might an ache in the body.

However, an ache in the body is often more easily described and helped than an ache for information might be. There are a relatively finite number of things that can be wrong with the body, but nearly a limitless number of questions, aches for information, that a person can have. In the same way a doctor goes through a series of questions, narrowing the diagnoses by a process of elimination, so too will a librarian ask questions of the user, narrowing the scope of the question in order to find the precise answer to that question, the real information need of the user.

The "reference interview," the name of this process by which the librarian questions the user about his or her questions to better understand what it is the user needs, is an often-studied phenomenon and practice. Over time, the process has been honed and modified to try and better understand what the user needs and how to provide that to him,

and to acknowledge that sometimes the user's verbal question and mental question are two different things. It is an interview with a focus, with the quiet purpose of teasing out the user's questions and needs as unobtrusively as possible.

The advent of new technology and new methods of communication with the library has brought change in library practices, including change in the reference interview process. Libraries are sometimes regarded as guardians and providers of both information and access to information, and by that they provide not only the more familiar printed materials but also newer formats of information, from microfiche to CD-ROMs to digitally published articles to the whole of the World Wide Web. But libraries represent much more: these new formats and new technologies reflect the needs and wants of those who use and support the library, and the needs and wants of the world at large. The need for electronic access to information has become more pressing in recent years, and libraries serve themselves well to maintain currency in these technologies, such as those accessible via the World Wide Web. But these technologies are, at their root, communication technologies. One major purpose of the World Wide Web is to communicate, with the same spirit of immediate and long-distance communication found in inventions like the telephone, though the manifestation of that communication may be different. The library, in other words, needs to have ways for information to come in as well as ways for information to flow out.

So consider, then, the communication software involved in instant messaging and chat programs. Although perhaps not viewed on the same grandiose scale as the potential seen in the Web as a whole, chat software is, nonetheless, an immensely important form of instant online communication. Indeed, for many people, it is a nearly ubiquitous

presence in their lives, an easier form of long-distance, instant communication for them than email or the telephone.

If a library intends to be open to communication both into and out of itself, adopting a new and popular form of communication only seems to make sense, especially given the apparent usefulness of these chat and instant messaging programs. Simultaneously like a face-to-face conversation, a telephone conversation, and written communication, and yet not at all like any of them, the opportunities for using this kind of communication medium were immediately apparent beyond simple chatter and conversation between friends and acquaintances. It is little wonder, then, that no sooner had chat programs become more familiar and more widely used that libraries of all sorts began investigating implementing library services delivered by instant messenger conversation.

In response to the presence of new electronic forms of communication being used by libraries across the country, the Reference and User Services Association's *Guidelines for Behavioral Performance of Reference and Information Service Providers* were first written in 1996 to "be used in the training, development, and/or evaluation of library professionals and staff, the Guidelines have subsequently been favorably evaluated by the profession, and currently enjoy widespread acceptance as standards for the measurement of effective reference transactions" (RUSA, 2004). But even as early as 1996, when the first formal set of guidelines for carrying out a successful reference transaction were written, libraries were beginning to send and receive email reference transactions. These guidelines were again modified in 2004 to try and better reflect the presence of electronic communication media involved in reference transactions in libraries (RUSA, 2004). By

2004, many libraries were beginning to implement virtual reference services through email reference services, social media websites, and chat and instant messaging services. In order to maintain the same quality of service to users demonstrated in face-to-face transactions, an expansion on the guidelines for a successful reference transaction was necessary, but the details of such an expansion were, as yet, given the relative newness of the technology and its use in libraries, uncertain.

The RUSA guidelines, as they now stand, do acknowledge some difference between the nature of a reference transaction conducted in a face-to-face environment and a reference transaction conducted virtually. There is an acknowledgement that the visual and auditory cues usually transmitted in a face-to-face and even a telephone reference transaction cannot be transmitted so easily in most virtual reference transactions. There is an acknowledgement that user instruction must be carried out differently in different media. And there is an acknowledgement that, at its heart, a reference transaction is a reference interview and a conversation between two people. Still, the RUSA guidelines are considered the best structure through which to conduct a reference transaction, whether in person or virtually. However, the medium of chat software forces both the librarian and the user to diverge from the recommended RUSA guidelines for conducting reference transactions.

Most of the RUSA guidelines can be translated to a chat reference transaction, in that the guidelines are based generally on observations of these transactions together with much of the criteria already established for face-to-face reference transactions. Indeed, the problems inherent in face-to-face reference transactions are, in some ways, magnified in a chat reference transaction. Although it has evolved, changed, and improved with

practice, the reference transaction is still, at best, an imperfect method. The barriers of human psychology, social interaction, and even language make it difficult for the librarian and even sometimes the user to negotiate the question being asked and the want behind it. Then, to complicate matters, the entire transaction is conducted through written communication only, with none of the usual visual and vocal cues and clues librarians and users both rely on in coming to an understanding of a question or an information need. The conversation is hobbled by the limitations of typing speed, of potential miscommunication and misspelling, of the human limitations to multi-tasking. And the librarian, meanwhile, potentially feels required to keep the whole conversation within the structure of the RUSA guidelines while he or she has no certain clue as to the feelings of the library user.

And this is to say nothing of the most basic problems found in face-to-face reference transactions as so often a librarian, thinking that he or she understands the question will begin to research answers only to realize shortly thereafter that they have been searching for the wrong answers. And then the user's time is wasted, the librarian's time is wasted, and they are no closer to an answer than when they began. The service the librarians have set themselves up to provide becomes inefficient, riddled with "false starts" and potentially inaccurate information for the user's question, and the user begins to feel dissatisfied with the entire reference interview process. As before, this ordeal is then complicated by the nature of a text-based form of communication, and a nearly instantaneous form of communication. The transaction is conducted potentially at the same speed as a face-to-face reference transaction, but with none of the help or cues that one would normally expect.

As much as the guidelines themselves can be translated to a chat reference service, so too can the problems of reference transactions be translated to a chat reference service. As such, new variations and divergences from the guidelines have emerged out of an absolute need to break from the guidelines in order to be certain of better service to the users. It is not out of either willful disobedience or ignorance of the RUSA guidelines that many chat conversations veer away from those guidelines. Rather, the medium of the virtual reference service itself, as a text-based, synchronous form of communication, requires users and librarians to break from the RUSA guidelines.

Literature Review

The problems posed by the reference interview have been examined in depth by numerous researchers and scholars. From the beginning, it has been obvious that there is no simple way to ascertain what the user wants to know or what the user needs to know. The reference interview itself developed out of a natural need of the user and a natural questioning of the librarian, not out of any formal policy. Thereafter, of course, certain guidelines and policies have been created, but these began in the natural conversation librarians and library users already held. Those characteristics and practices of the reference interview were observed and thereby changed, in an attempt to make the interview process more productive for the user. In the course of these observations, going back at least forty years or more, numerous researchers have identified and discussed different aspects of this same situation.

Perhaps Taylor is among the best known for research in the field, starting with "Question-negotiation and information seeking in libraries" (1968). In this study, Taylor

identified five levels of information that users provide and which librarians gather in the course of a reference interview. These levels are, "first, subject definition; second, objective and motivation; third, personal characteristics of the inquirer; fourth, relationship of inquiry description to file organization; and fifth, anticipated or acceptable answers" (Taylor, 1968). These five levels are, effectively, the stages of the reference interview, as the librarian tries to gather as much information as possible from the user before beginning any research. However, using only what the library user volunteers will not return very good results. The user often only volunteers what he or she thinks she ought to, providing the librarian with very little additional information which can shape and direct the reference interaction and the research to follow.

The classic response to this realization that users only provide information that they know they know is N. J. Belkin's 1980 article, "Anomalous states of knowledge as a basis for information retrieval." This article establishes the famous "ASK" idea of "Anomalous States of Knowledge, stating formally that users do not know what they do not know, and so cannot articulate what it is that they need as it is, in fact, unknown. It is up to the librarian, then, to ask the right questions and uncover that unknown question. The user's question is not altered or forced into another direction by the librarian, only better understood by both the librarian and the user. And through that better understanding, better information can be returned to the user. Here already is a study that proves that only through further and better questioning can one provide the proper depth of research and service to users.

In a similar vein, L. Shin-Jeng and N. J. Belkin's 2005 article, "Validation of a model of information seeking over multiple search sessions," interestingly suggests that

research can and must take place through several interrelated questions. Although

primarily focused on computer-based research, the behavior of users observed in the

course of this research is still relevant to the problems of the reference interview. A

user's question, as Shin-Jeng and Belkin note, is not necessarily discrete, and the research

cycle does not end with the answering of one question. If one applies Belkin's other idea,

that of the "Anomalous State of Knowledge," then one can see how a user, as the

research progresses, would begin to realize better what his or her actual question or

information need might be. So, perhaps this research suggests that the reference

librarian's questions should not come either all at the beginning of the research, nor at the

end, but rather as part of the research process. As the user and the librarian progress

through the questions and begin to research, the librarian can guide the conversation and

the research while still requesting further information and explanations from the user,

even as the user's ideas are forming and reforming. The reference interview has never

been an entirely static situation, as the librarian asks for the user's initial question, and

then further refines the search based on the user's responses to any initial searching that

might be done. Or, otherwise, the librarian asks a number of questions, thereby trying to

refine the user's question before any research is begun. Both methods seem valid and it

would require a comparison of the two methods to determine the one which serves the

user the best. It may be shown that a combination of the two is best, as too much

preemptive research can lead to a "false start," but too little may seem to the user as

though he is not being helped as he would expect. Indeed, contemporary

recommendations and guidelines for best research assistance practice recommend

involving the user, accompanying him or her to the area of the library or website, and continuing to assist beyond acting as a simple guidepost.

Besides the theoretical observations made by Taylor and the largely theoretical observations made by Belkin, B. Dervin (1986) has instead chosen to examine techniques more directly useful to practitioners of reference work in her article, "Neutral questioning: a new approach to the reference interview" (1986). Like Belkin, Dervin identifies the user's problem as being an unknown unknown, or a gap in the user's knowledge. The user must, once he or she has acknowledged that there is a gap in understanding, to make sense of things again, and they are metaphorically "stopped" until they do. In the process of seeking information, the gap is bridged with information or understanding, and the user is allowed to move again. Dervin discusses the reference interview directly noting librarians' reactions "in a successful reference interview (one in which the librarian felt that he or she finally understood the user's need fully), the librarian tried to find out the situation behind the query and the intended uses of the information. Librarians reported that although they were reluctant to ask users such questions directly, they almost always found a description of the user's situation and objectives to be extremely helpful for understanding the kind of information or material needed" (Dervin, 1986). In other words, with further questioning, the user's need is understood, and better information can be returned. Dervin's article, however, pushes the boundaries of what is considered acceptable practice according to the RUSA, the Reference and User Services Association of the American Library Association, guidelines for reference transactions. As helpful as it is to know the reason behind a user's information need, there is an ethical obligation on the part of the librarian to

remain uninvolved and neutral, as an instrument of research and not an involved party. Indeed, pressing the "why?" issue too hard will often make users stop providing useful information, and may even drive them to start to lie. There is a subtle balance that must be maintained in order to find out the "why?" without invading the user's privacy.

However, perhaps one article that proves the necessity of human interaction in performing research is M. Hertzum and A. Pejtersen's article, "The information-seeking practices of engineers: searching for documents as well as for people" (2000). In this article, the authors examine the tendency of engineers to use people as resources as much as they use documents or library resources. This article suggests that the people questioned, who may or may not be librarians, should be considered as much of a resource as any book. Therefore, in the case of reference librarians, it is their prerogative to ask questions of the user and to gather more information about what they need. In the same way that an online database requests information from the user, so too do librarians. The more information that a user can provide, the better the information returned will be.

It is through this research and the observations made of these past forty or more years that the framework for a successful reference interview has been created by the American Library Association. The guidelines ALA has published are, admittedly, just that: guidelines. They have been criticized as being more like an employee handbook than guidelines for how best to understand and answer a user's question, but these guidelines established the behavioral norms and best recommendations for a successful reference transaction, even if they do not directly guide a librarian in the course of his or her questions and responses. They provide the "best practices" for the reference interview, when conducted in person, and guide the conversation along as best it can be

guided, prompting the librarian to thereby prompt the user--whether by accompanying him or her while embarking on research, teaching the user how to use resources independently, and even asking if the resources provided fully answer the user's question. It is through these guidelines that users believe they are satisfied at least 55 percent of the time after a reference transaction, as Hernon and McClure proved, even if the information may not fully meet their needs or even be accurate (1986).

It is a wonder, then, that given the varieties of user questions, and how these questions may seem "unbearably unique and filled with all sorts of details too myriad for any professional to deal with reasonably," answers can still be given to users (Dervin, 1986). The differences in individual people, their minds, and their questions would seem to make establishing a method in the midst of this madness impossible. But the answer and the real structure behind the reference transaction guidelines, lies in the fact that a reference transaction is a conversation between two people and one of them has a question, as all the studies of the last forty years have proven.

Enter, then, into this fairly established practice, the idea of electronic reference services in the late 20th and early 21st centuries. Electronic reference services have changed the form of reference transactions, perhaps in the same way that telephone reference services rattled the makeup of the literal face-to-face reference transaction with a new medium of communication and a new issue of distance. However, unlike the telephone, the medium of electronic reference services, of email reference, of message boards, and of instant message and chat reference services, are all stripped further of the cues and hints present in live transactions. Indeed, in many electronic reference transactions, time itself is somewhat fluid, as an answer can be found and returned some

time later, albeit instantly after it is found. The lack of synchronicity found in even

supposedly synchronous media, such as instant messenger services, complicates the parts

of the reference interview still further.

As such, given this new medium of communication and numerous libraries and

information organizations implementing it as a new means of communication and service

for their users, research regarding this medium has likewise appeared.

Although the Reference and User Services Association Guidelines for Behavioral

Performance of Reference and Information Service Providers for reference transactions

have been adjusted as of 2004 to consider the differences inherent in a chat reference

transaction and a face-to-face transaction, numerous studies have effectively rewritten the

requirements to be more specific or more pertinent to the issues faced by librarians in

chat reference situations, such as the studies conducted by Bobrowsky, Beck, and Grant

(2005); Radford (2006); and Ward and Barbier (2010). These changes are not dramatic

in that they alter the structure of the interview, but they do acknowledge the differences

present in virtual versus face-to-face reference transactions. Generally speaking, they

subdivide the sections of the RUSA guidelines relating to inquiries and reference

interview techniques, as the reference interview itself is the heart of the transaction

(ALA, 2004).

Maness, Naper, amd Chadhuri discuss the need for better training in reference

interviews as well as better training in translating reference interview skills into a digital

environment, perhaps by permanently rewriting the guidelines to suit virtual reference

transactions (2009). Their study points out the numerous issues on the parts of the

librarians in regards to chat reference transactions, though the patrons are by no means

entirely innocent. In this study, instances of poor communication, poor approachability, poor cueing, and poor signals of interest become quite clear through the examination of chat conversation transcripts (Maness, Naper, and Chadhuri, 2009). In other words, the difficulties identified by other researchers that make chat reference transactions, namely the lack of nonverbal signals, were also found to be present in this study.

Most obvious, of course, is that fact that, "chat reference lacks the essential human interaction that makes face-to-face reference a complex and wonderful phenomenon…a successful chat transaction depends on the librarian's ability to compensate for those missing cues" (Bobrowsky, Beck, and Grant, 2005). This difference is the first great problem to be overcome in considering the differences between chat reference and face-to-face reference transactions. Instead of being able to use relatively natural and instinctive social and language cues, many of which can transfer vocally to telephone reference, in chat reference one has to create an almost artificial equivalent of written signals. Desai and Graves speak to this issue and give a list of recommended practices for proper "Netiquette," namely to be patient with the user, to avoid using all capital letters, and to avoid sarcasm (2008). These seem like excessively simple recommendations, but they outline some of the problems posed by a synchronous, written form of communication. One has to bend the normal synchronous signals of body language and vocalizations into a different shape to be used in a chat medium. So, "despite the lack of a physical presence, the chat reference librarian can, in a sense, adapt traditional face-to-face reference interview skills to the chat transactions" (Bobrowsky, Beck, and Grant, 2005).

Another issue faced by the virtual reference librarian is the "tension" of wanting to provide an immediate answer in such an immediate medium but feeling obliged, as per the reference transaction guidelines, to teach the user how to find the information for himself or herself. "Ready Reference" questions are common enough and do deserve an answer to the question rather than recommendations for resources. But a student who needs two articles "should not simply be handed two articles" (Desai and Graves, 2008). As has been noted, "in many reference interactions, especially in academic libraries, there is tension between the patron's request for the librarian to give them an answer and the librarian's desire to teach the patron the skills to help them answer their own question" (Bobrowsky, Beck, and Grant, 2005). The RUSA guidelines recommend user instruction for library resources in the hopes that, next time the user has a similar information need, he or she will be able to meet it himself or herself. Desai and Graves speak in depth about this "Teachable Moment" inherent in reference transactions, including and especially virtual reference transactions, where a library user can become an independent searcher of the library's--or perhaps the world's--materials (2008). As they note, "skill is needed to exploit database features to their fullest, and to refine the search more precisely after viewing an overwhelming number of preliminary results [...] such skills can be learned and may be necessary to combat information overload; therefore instruction is beneficial and becomes an integral part of reference service" (Desai and Graves, 2008). And, indeed, there is some difficulty involved in both writing a response and in guiding a user through the steps to that response. Ward continues to examine this tension and whether users are being given instruction and resources or are simply being "spoon-fed" answers (2004). The basic problem, again, is that it is difficult at best to include both

instruction and information, and most librarians are quicker at finding the information in a chat reference scenario than they are at giving chat-based instruction (Ward, 2004). The limitations of the software, the difficulties of multi-tasking, and the basic problem of trying to type two things at once in an only mostly synchronous and un-cued conversation all make chat reference transactions more complicated than they might at first seem.

Perhaps the issue, then, as Ronan, Reakes, and Ochoa have indicated, is that it is surprisingly difficult for librarians to strictly adhere to the RUSA guidelines (2006). Indeed, they identify that it is partially due to the software or the nature of a chat transaction that makes adhering to the traditional RUSA guidelines so difficult. For example, "in many instances, the question is posed prior to the librarian actually establishing contact with the patron," forcing the librarian to go around the first few part of the RUSA guidelines and failing to maintain approachability and interest (Ronan, Reakes, and Ochoa, 2006). Although this study goes on to argue that improvements in the problems of approachability, appearance of interest, and question-clarification processes will be found in "greater awareness of the interviewing guidelines by most librarians and library staff providing chat reference service" (Ronan, Reakes, and Ochoa, 2006). Or, the answers to the issues posed by the chat reference transaction and complicated by the structure of the RUSA guidelines. However, it seems far more likely that the answer is to be found in the existing chat conversations and that perhaps it is the guidelines that could be modified.

However, Nahyun and Gregory argue that the prescribed guidelines and the adherence to them are "strong predictors of user satisfaction" (2007). In particular identify the "use of patron's name, listening, searching, offering pointers, asking if

questions were answered, and asking patrons to come back" as all supportive of a successful chat reference transaction (Nahyun and Gregory, 2007). In other words, using the RUSA guideline skills such as "receptive and cordial listening, searching information sources with or for the patrons, providing information sources, asking patrons whether the question was answered completely, and asking patrons to return when they need further assistance" were all noticeable conducive to a better chat reference transaction (Nahyun and Gregory, 2007). Clearly, since these parts of a reference transaction are so conducive to a successful face-to-face transaction, there can be little wonder than they will prove just as useful in a virtual reference transaction. Perhaps the truth they reveal is something about the way both users and librarians think about questions, regardless of the medium in which the question is asked. These particular aspects of the transaction are, perhaps, easier to translate to an electronic medium than some of the other aspects of the transaction and its guidelines. This study does not examine some of the issues of greetings, approachability, and out of order conversations, but, again, the truth of the chat reference transaction is to be found in its transcripts.

As such, to observe these issues and successes firsthand in chat reference transactions, one must turn to the transactions themselves. "A study of virtual reference transactions in their natural setting is essential to understand and visualize the obstacles facing the virtual reference librarian," Ward and Barbier explain (2010). And in this opinion, they agree with White, Abels, and Kaske (2003); Houlson, McCready, and Pfahl (2006); and Arnold and Kaske (2005) in the necessity of using unobtrusively observed chat conversations in order to determine the actual techniques used by librarians in answering these questions. Indeed, it is in the natural form of these conversations that

one sees the actual form of the reference transaction and the ways in which it moves. In other words, rather than trying to force the conversation to take a certain track through directed questions or particular training, it is far better to examine what it already going on and build structures around what already exists, as the original reference interview guidelines were formed. As Jensen notes, "time spent by investigators devising questions and training people in how to ask them would be better used in developing descriptive taxonomies of actual question types and in analyzing transcripts" (2004).

So perhaps, rather than beginning from a reference interview perspective, one ought to begin at the real beginning: not the reference transaction, but the conversation. The structure of the reference transaction guidelines came out of the existing structure of library and patron conversations. Therefore, the structure or recommendations for chat reference services should come from the existing communication. As such, take, for example, Walther's study of chat reference transactions as conversations, the results of which, "revealed that interpersonal skills important to FtF [face-to-face] reference success are present (although modified) in VRS [virtual reference service]. These include: techniques for rapport building, compensation for lack of nonverbal cues, strategies for relationship development, evidence of deference and respect, face-saving tactics, greeting and closing rituals" (Radford, 2006). Walther studies the different aspects, positive and negative, beneficial and harmful, involved in a reference transaction from a communication standpoint. A reference transaction is, after all, communication, whether that communication takes place in person or at a distance. The basic "relational facilitators," or beneficial actions for the conversation, identified were, "rapport building, deference, compensation for lack of visual cues, greeting ritual, and closing ritual"

(2006). Certainly, shades of all of these facilitators can be found in the existing RUSA guidelines already. By contrast, the "relational barriers," or obstacles for the conversation, identified were, "relational disconnect and closing problems." Or, in other words, there was no rapport built and there was no good exit from the conversation. Walther then goes on to divide and subdivide these facilitators and barriers into various types and subtypes of interactions and patterns of interaction. This kind of taxonomy does point out the various points in a conversation or chat reference transaction where variations from the RUSA guidelines occur, and some view as to why those variations might occur. Indeed, that Radford can identify and name these conversational patterns makes it clear that there is an existing structure, but there may not be one right way in which to answer the information needs asked within it.

The body of literature and research surrounding this new technology is by no means small. But in examining this literature, one begins to see that there is an agreement that the guidelines created for face-to-face reference transactions can be transferred to a virtual reference environment but only with changes, and that there are still issues involved in successful virtual and chat reference transactions. There are patterns present in chat reference conversations, though these patterns do not always adhere to the prescribed RUSA guidelines. However, the times at which these conversations depart from the structure of the guidelines are, in themselves, parts of a pattern. In observing these departures, one can determine when and why chat reference conversations diverge from the expected patterns and guidelines, and what course might be suggested in modifying perhaps both the guidelines and the conversation itself.

Methodology

This study utilizes the unobtrusive observation and content analysis of transcripts of chat reference transactions conducted by librarians with library users to see how often, where, when, and why the reference transaction diverges from the prescribed guidelines for a successful chat reference interview as established by the Research and User Services Association of the American Library Association.

In this study, "librarians" or "reference librarians" here will refer generally to anyone in a professional or paraprofessional position who serves as a member of the staff of the reference desk or a member of the virtual reference desk, who is asked questions by the library's users via the library's chat reference service, can answer those questions, and has answered questions in such a format. These librarians may be full-time professional librarians or part-time paraprofessional student assistants, but these librarians are the ones of whom user questions are asked. These librarians, it is expected, are familiar with the guidelines for reference transactions established by the Research and User Services Association and seek to utilize these guidelines in carrying out a reference transaction conducted via chat service with a library user.

Furthermore, in this study, a "user," "library user," "patron," or "library patron" is any person, whether affiliated or unaffiliated with the university, who makes use the University of North Carolina's chat reference service through the Walter Royal Davis library. Users typically request assistance with research from or pose a question to a reference librarian, information professional, or paraprofessional student worker who can and has answered chat reference questions through the university's chat reference service. Users may approach the library's chat reference service with any type of question, as they

would approach a reference desk in the real world with any type of question, from "ready reference" questions which require only a quick answer to in-depth research questions to questions about library policy to assistance with the technical aspects of electronic library services.

The term "chat reference service," "virtual reference service," and "chat reference" will here generally refer to the services offered by the reference department of the Walter Royal Davis Library at the University of North Carolina at Chapel Hill which resemble face-to-face reference services and telephone reference services but which are conducted through the various types of chat and instant messaging programs and software. These programs resemble email, in that they are largely text-based, and a face-to-face transaction, in that the communication is effectively instantaneous. It is through this kind of software that users will conduct their conversations with the librarians.

These conversations will be called "reference transactions." Here, the term "reference transaction" will refer to the conversation between the information professional, paraprofessional, or librarian and the library user through which the information professional identifies the user's information needs and seeks to best fulfill that need. The process of the reference transaction has been outlined by the Research and User Services Association of the American Library Association in their *Guidelines for Behavioral Performance of Reference and Information Service Providers* written in 2004. These instructions will be referred to as "the RUSA guidelines" or "the guidelines" in the course of this study. Likewise, in this study, a "chat reference transaction" refers to a reference transaction that is conducted via chat or instant messaging software or programs. Chat reference transactions are expected to strongly resemble face-to-face

reference transactions, according to the RUSA guidelines. The reference transactions the users conduct with the librarian in the context of this study will take place within the chat or instant messaging programs designated by the library to be the library's and the librarian's representative presence in electronic and instant messaging communication. The conversations that take place within these programs between the librarians and the users will then be observed through the saved records of transcripts of their conversations. These transcripts are preserved by the University of North Carolina Library system for quality control and research purposes.

The original data on which this study has been built consisted of chat reference conversations submitted to the Davis Library virtual reference service at the University of North Carolina at Chapel Hill through various chat software programs and websites. Included were conversations held through AOL Instant Messenger (AIM), Yahoo Messenger, MSN Messenger, and through the anonymous chat widget embedded in the library's website. This chat reference service is staffed by full-time librarians and paraprofessionals and part-time graduate student paraprofessionals during the day from the Walter Royal Davis reference services department by day and by part-time graduate student paraprofessionals from the University of North Carolina at Chapel Hill, Duke University, and North Carolina State University at night as part of a late night consortium chat reference service.

2,542 transcript files, collected from May 14, 2007 to May 15, 2008 for quality control and research purposes were originally pooled for examination. Of those 2,542 files, very small files, indicating a very short conversation, were immediately eliminated from the pool of potential transcripts for analysis. Longer conversations were preferred,

as longer conversations would more likely reveal patterns in the parts of the reference

transaction in which librarians or patrons diverged from the RUSA guidelines. However,

in eliminating the smallest files and the shortest conversations, some transcripts were

rendered incomplete. Each newly opened window or conversation creates a new file, and

in some instances the librarian would close a chat window before the patron had

completely finished speaking. A closer examination of this phenomenon is given below.

After further observation and elimination of other transcripts which did not meet criteria

for this study, the remaining file names were first collected and sorted chronologically in

a .txt file, and then input into an Excel spreadsheet, so each conversation had a unique

line number.

These line numbers were then used to generate random numbers to select chat

conversations to be examined. A random number generator was used to select which

files were to be examined. 303 transcripts were then selected. Numbers generated by the

random number generator were matched to the row numbers in the Excel spreadsheet to

determine the data set for a set of transcripts to be used for research. The remaining chats

after this selection numbered 303.

Upon closer examination of those 303 transcripts, three conversations proved to

be staff-to-staff communication through the library's chat reference service and were

eliminated, leaving exactly 300 conversation transcripts to be examined in the course of

this study.

The transcripts were then made anonymous by replacing the librarian's screen

name with "LIBRARIAN" and the patron's screen name with "PATRON." Any other

identifying information, such as telephone numbers, personal identification numbers, or

real names were redacted and replaced with "XXXX," "LIBRARIAN," or "PATRON,"
as the situation demanded. The transcripts were then saved as .txt files and submitted for
analysis.

These transcripts have been analyzed qualitatively and, to a lesser extent,
quantitatively. Calculations regarding whether a conversation meets the requirements for
each part of the reference transaction have been completed, giving a percentage rate for
success in each part. A percentage of success for each part indicates if the librarian
followed the RUSA guidelines for each part of a reference transaction at least once per
part in the course of the full reference transaction. The primary purpose of this study is to
examine where, when, how, and potentially why reference chat transactions diverge from
the recommended practices as established in the RUSA guidelines. The intention is not
to prove the guidelines wrong, nor to argue that there are no best practices for chat
reference transactions, but rather to examine whether, given the nature of a text-based
medium, guidelines based on face-to-face transactions fail to acknowledge and
incorporate the differences present in a chat reference transaction.

Given that the RUSA guidelines do not so fully encompass the issues presented in
a chat reference transaction, nor do they completely recommend best practices, a separate
set of criteria specifically for chat reference transactions must be developed. For the sake
of observing whether a chat reference conversation does, in fact, cover a part of the
RUSA guidelines, slightly different criteria and definitions for each part of the RUSA
guidelines have been created for this study. These criteria are based on the part of a
successful reference transaction as defined by the Research and User Services
Association and observations made in the course of this study and are divided into five

parts, based on the original RUSA guidelines: approachability, interest,

listening/inquiring, searching, and follow-up.

Approachability

In the context of this study, and as defined by RUSA, "approachability" refers to

the apparent willingness of the librarian to be consulted in regards to a question. The

RUSA guidelines recommend providing "prominent, jargon-free links to all forms of

reference services from the home page of the library's Web site, and throughout the site

wherever research assistance may be sought out" (2004). However, in the context of a

chat reference transaction, approachability is a willingness to communicate in the

medium and by the medium. In the course of this study, approachability is defined as the

appearance of a willingness to assist the library user, generally manifesting itself in

greetings ranging from a simple "hi" to a greeting with both the librarian's name and the

patron's name, to questions such as "how may I help you?" All of these actions, while

lacking some of the nonverbal cues that generally accompany them, mirror the kind of

initial comment that might be made at a reference desk at the beginning of a face-to-face

reference transaction. Special attention has been paid to the issue of greetings in the

course of a reference transaction.

Interest

According to the RUSAguidelines, "a successful librarian must demonstrate a

high degree of interest in the reference transaction" in order for the whole of the

transaction to succeed (2004). In a face-to-face transaction, signals of interest are often

non-verbal or nearly non-verbal, such as nodding the head, maintaining eye-contact, and

making brief comments of understanding or agreement, all of which are aspects of

Radford's "rapport building" (2006). In a text-based context, where there is only verbal communication, and only verbal communication that is stripped of the non-verbal vocal cues generally associated with it, one must create different ways of indicating interest. Most significant among RUSA's recommendations for remote reference services is maintaining "word contact" in a text-based situation such as chat reference. "Word contact" is a textual equivalent of those non-verbal cues, generally comprising those brief comments of understanding or agreement, but also some kinds of information to indicate that the librarian is still present. In the course of this study, comments such as "Okay," "I see," and "tell me more" are all considered "word contact," along with comments such as "hold on just a moment," "let me take a look in our databases," along with other statements to the user that indicate that the librarian is still present in the conversation, but engaged in searching for a resource for the user. Comments such as these examples and similar comments are all regarded as signals of interest in the course of this study.

Listening and Inquiring

This third part of the reference transaction is, in fact, the reference interview, in which the librarian seeks to better understand the user's true information need and potential question-behind-a question. As RUSA states, "the librarian must be effective in identifying the patron's information needs and must do so in a manner that keeps patrons at ease" (2004). The conversation now becomes somewhat inverted, as the librarian begins to ask questions of the library user. In many regards, this section of the reference transaction seems the simplest to translate from a face-to-face transaction to an electronic transaction. Given that there are less intense nonverbal cues regarding approachability, a dialogue of questions and answers is somewhat easier to conduct in a text-based

environment, though the risk of misunderstanding is still present. Any questions or comments through which a librarian could come to a better understanding of the library user's question were considered to be part of this third part of the reference transaction. Questions such as "could you tell me a little more about what you need?" or specific questions regarding the type of information needed (a newspaper article as opposed to a journal article if a user needs "an article" on a particular topic) are regarded as falling under this section of the reference transaction.

Searching

As the RUSA guidelines state, "The search process is the portion of the transaction in which behavior and accuracy intersect" (2004). In this part of the reference transaction, the librarian, having better established the user's information need, seeks to assist with the user's search by recommending particular resources or avenues for searching, together with some education of the user in making the best use of these resources. In this endeavor, the librarian and the user become collaborators in the completion of the search, as it hopefully leads to the answer to the user's information need. Certain characteristics of the searching assistance part of the RUSA guidelines could be observed in chat reference transactions. These characteristics included finding out what library users had already tried, explaining the search strategy to the user, educating the user in the use of materials or resources, and offering suggestions in the best ways to go about searching. This particular section proved problematic in its definition, and greater discussion of the issues of developing criteria for this portion of the reference transaction guidelines will be discussed below. In some regards, this section was drastically altered as it was translated into a chat reference transaction, but

the idea itself is present, and certain aspects of the face-to-face transaction

recommendations are still present.

Follow-up

Perhaps the most deceptively simple part to a reference transaction is determining

whether a patron is satisfied with the results that were obtained. The RUSA guidelines

recommend asking if a patron's question has been completely answered, recommending

other libraries or resources outside the library to the patron, and suggesting that the

patron return to the library if he or she has any further questions (2004). In many face-to-

face transactions, it can be somewhat difficult to include an inquiry about whether a

patron's question has been fully answer, but this aspect of the reference transaction is

somewhat easier to translate to the chat reference transaction, since the conversation

exists in text, and the need for continued "word contact" still exists. Comments such as

"does that get you started on your research?" or "can I help you with anything else

today?" and "please feel free to contact the library again if you have any further

questions" were considered "follow-up" actions, as they inquired as to whether the patron

was satisfied with his or her answer and encouraged the user to return to the library's

service. If a chat reference transaction transcript contained these comments or others like

them, then the librarian was considered to have included the follow-up part of the

reference interview in his or her transaction. However, owing to the method by which

the samples of transcripts were collected, in which the shortest conversations were

eliminated, some amount of follow-up comments may have been lost. This problem will

be discussed in greater detail below.

Although relatively simple in its scope, this study seeks to examine patterns observed in chat reference transactions in an effort to determine how and where a chat reference transaction begins to diverge from the patterns laid out in the RUSA guidelines. Through the establishment of specific definitions for each part of the RUSA guidelines for reference transactions as these parts appear in a chat reference transaction context, certain patterns of behavior or situational responses will begin to emerge which will indicate how, where, and potentially why a chat reference transaction cannot perfectly adhere to the RUSA guidelines for reference transactions.

Limitations

As with any study, this examination of chat reference transcripts for patterns of divergence from the RUSA guidelines for reference transactions bears several limitations.

Of first concern is the relatively small sample size. Although certain obvious patterns may emerge in a small sample of chat reference transcripts, a larger sample would be needed to encourage the more subtle patterns to emerge. Likewise, a larger sample would better reinforce any patterns observed here. This sample, while a decent size, is far too small for real certainty with regards to patterns observed, and either more studies or a larger sample would be needed to truly declare certain observations as generalizable patterns present in chat reference transactions. A small sample size can emphasize false patterns or hide the larger and more overarching patterns. 300 chat transcripts is a serviceable number, but the number may not be large enough to make sure that the results are accurate.

Second, concern could be raised over the necessity of creating criteria for consideration. From the very beginning, the question must be asked whether this study actually examines something connected to the original RUSA guidelines if different criteria for a "correctly completed" section of the RUSA guidelines are to be created. These new criteria are, in fact, specific parts of the RUSA guidelines drawn out of those guidelines for their ease of observation in the course of a chat reference transaction. Aspects such as maintaining eye contact are not present in chat reference transactions, and so parallel forms of these same signals must be drawn out and observed. However, to create criteria too much unlike the original guidelines is to create entirely new guidelines, which is beyond the scope of this research. The purpose of this study is to acknowledge that the existing RUSA guidelines have merit, and that many reference transactions follow their structure as a pattern, but that the medium of chat reference transactions obliges users and librarians to change the structure of the reference transaction. So creating new criteria will render this study utterly useless, as its purpose is to look from the guidelines to the field and observe patterns in both.

Likewise, as it falls beyond the scope of this research, there was no regard given for the accuracy of the responses that users received from the librarians. Accuracy here would refer to the librarian properly answering the user's information needs, as the user requested, or fully answering the question that the user asked with the appropriate information. However, it is far more difficult to judge a library user's response to the resource provided through a text-based medium, making it challenging to determine if the librarian's responses were accurate. Therefore, it was determined that omitting observations on the accuracy of the librarian's answer would be more beneficial in

determining patterns present in the whole of the transaction. The purpose of this study is to examine patterns in adherence to and departure from the RUSA guidelines in the course of a chat reference transaction, not the accuracy of the information presented in the course of a chat reference transaction. But in disregarding the level of accuracy, it is possible, then, that this study has disregarded a significant aspect of the reference transaction and its guidelines as a whole.

Likewise, there was no small amount of difficulty involved in determining whether or not the "searching" section of the RUSA guidelines had been properly completed. Many questions that were presented to the librarians more closely resembled "ready reference" questions than in-depth reference or research questions. As such, a simple answer to that question probably served the user best, but it confused any attempt at recording strict statistics regarding the number of times librarians properly completed the "searching" section of the RUSA guidelines. In being uncertain as to whether the searching component of the guidelines had been completed, the pattern of directing as opposed to teaching users may have been overlooked. An acknowledgement of this pattern is present in this study, but a focused look exclusively on this section of the guidelines would draw out the patterns present in the styles of answering. In the complicated decisions to be made regarding whether a librarian had or had not followed the guidelines properly, the accuracy of the statistics for this section may not be as certain as in other sections.

Furthermore, given the method by which the transcripts were selected, focusing on the longest conversations in the hopes of better observations of patterns, portions of those same conversations were, at times, lost. If a librarian is performing a reference

transaction in a chat window and a new chat conversation is begun, a new window appears for this new conversation. If the librarian closes the window at the conclusion or the apparent conclusion of the conversation the next chat conversation will appear in a new chat window, even if that chat comes from the same library user as before. In other words, this new window holds the continuation of the previous conversation, which often only last for a few lines. Despite the librarian closing the conversation window with an understanding that the conversation is over, users will often return to thank the librarians for their help or to make it clear that the conversation is over. These conversations often last for only two or three exchanges and would, when saved, only create very small files. The smallest files were eliminated from the initial pool of chat transcripts to be examined. And many of these files were the final goodbyes, thanks, and follow-up comments from both librarians and patrons. As such, strictly speaking, some of these chat transcripts are incomplete, and therefore so too could be the data gathered from these transcripts and conversations and the patterns observed in them. But the difficulty in matching these pieces of conversations with the original conversation has effectively forced this incompleteness on these transcripts, and may have therefore forced this incompleteness onto the data and observations gleaned from them.

Moreover, the answers to this study may already exist in any number of the earlier, similar studies carried out in recent years, including those examined in the survey of the literature prior to this research. The presence of new technology being put to new purposes in libraries all across both the United States and the world will inevitably lead to close examinations of the uses, misuses, successes, and problems with that technology as it is applied to library uses and user services. Several studies, most notably Radford's

2006 study of chat reference through the lens of communication, have already examined

certain patterns that appear in the course of chat reference transactions. Given the

interest that numerous scholars and researchers have expressed in the issue of conducting

a reference interview in an unusual environment, or an environment lacking the cues to

which librarians have been trained, it is little wonder than the literature stemming from

this topic is immense.

Finally, it is possible that the results of this study may prove inconclusive. The

reference transaction format has changed significantly over the years as librarians have

continued to refine it, and it will continue to change in an effort to better serve library

users and to better encompass the range of technology to users will bring to use in the

library. But it is possible that there is no "perfect technique" for a reference transaction

and that the varieties of human psychology, the limitations of language, the nature of

social interactions, and librarians' own desire to be helpful without being intrusive have

brought the reference transaction as far as it can be carried. Combining, then, this

possible end to the development of the reference transaction insofar as the human

component is concerned, with the communication technologies, and it seems possible that

the next step in improving the reference interview is not to look at the reference

transactions, but to look at the library users, the thought processes of library users, and

the process of library education. In short, although this study has identified several

patterns present in chat reference transactions, it may, in fact, be looking in the wrong

direction entirely.

Discussion of Results

On average, the chat transactions lasted between five and fifteen minutes, with some conversations taking less time and some taking more, depending on the nature of the question and the type of answer it required. Also, although there were relatively few identifying statements given, most of the questions seemed to be similar to those asked by university and college students at a library reference desk. Of the 300 chat reference transcripts examined, at least 125, or 42%, adhered to the entire RUSA guidelines for reference transactions as these guidelines were defined for this study. Owing to the methods by which these transcripts were selected, which excluded some partial transcripts which may have included the missing pieces of the transcripts that were examined, this percentage may, in fact, be higher than just 42%. It is of little surprise that the number would be as high as 42%, if not higher, since the format of the reference transaction is based on natural human interaction, but formalized with recommendations for best practice. Still, even with a basis in natural interaction and recommendations of best practice, certain differing patterns do emerge within each section of the chat reference transaction.

It would seem, though, that adherence to the guidelines would be relatively simple. The reference transaction is taught to most library science students, and the process itself stems from the existing format of conversations between librarians and library users. Therefore, by following the logical process of a conversation or of a question asked of any person, and not necessarily a librarian, one can still observe the basic structure of a reference transaction: greeting, conversation, clarification, answer retrieval, and closing.

Approachability

Approachability in the context of a chat reference interview generally appears in the form of greetings or general inquiries directed towards the library user. The phrasing is very much like the sort of introductory comments that are made during a face-to-face transaction. In some regards, the beginning of the transaction resembles the beginning of most other service interactions, in that each person acknowledges the other and the one in the service position inquires of the other, the patron or user, as to what help can be given. In a chat reference transaction context, librarians and patrons generally both greet each other in a relatively friendly manner, though the greetings range from the somewhat formal "good afternoon" to the very casual "hi." From there, the librarian often, though not always, inquires as to what he or she can do to assist the library user, to which the user would respond with his or her initial understanding of an information need, and the reference transaction would commence.

71% of the chat reference transactions examined began with some kind of greeting from the patron, ranging from "hi" to "hello, is anyone there?" to "Hello, I need some help finding articles on--". To this, the librarians answered with a respectable 82% approachability rate, meaning that they responded with some kind of greeting, regardless of the library user's opening statement, in 247 transcripts out of 300. In some cases, such as when the patron did not open with a greeting, but simply a statement of a need or a question (29% of the transcripts analyzed), the librarian would still often reply with "hello" or "hi" and then proceed to see to the user's question through the next steps of the reference transaction.

The greeting words themselves were generally standard, with "hello" and "hi" being the most common opening. However, several patterns of greetings appeared in the course of the examination of these chat transcripts. These patterns can be broken down into roughly four types: solitary greetings, greetings with questions, the uncertain greeting, and the superfluous greeting. Within those four types, two other patterns were observed: instances with no greeting from the patron, and instances with no greeting from the librarian. Ideally, in the course of the reference transaction, the patron would make himself or herself known, and the librarian would answer in such a way as to make himself or herself seem approachable and to build what Radford referred to as "rapport" with the patron (2006). In theory, this might involve the sort of back and forth greeting that one hears in a telephone reference transaction, with each party establishing a presence in the conversation before the conversation proceeds. But, in practice, the variations on a simple opening statement in a chat reference transaction lead to much more complicated beginnings.

Solitary Greetings

Solitary greetings accounted for 37%, or 111, of the chat transcripts examined. The division between solitary greetings, greetings with a question, and no greeting but only a question was fairly evenly split into thirds. One can consider these three types to be the "standard" patron greetings. Greeting styles outside of these three types are very unusual and only a very few examples were observed in the course of this research.

Solitary greetings involve a single message from the user with no question attached, almost like an announcement that he or she is present in the chat conversation

and would like assistance. There is generally no indication as to what the user's question or information need will be until the librarian begins to ask.

> PATRON: hi
> LIBRARIAN: hi this LIBRARIAN-NAME... did you have a question?
> PATRON: hi LIBRARIAN-NAME
> PATRON: yes, I do

In some regard, this entire exchange could be considered a greeting: the patron announces his or her presence in the chat conversation, to which the librarian responds and follows with an inquiry as to the user's needs. The user then replies with his or her initial information need or question, to which the librarian must reply with some interest, which connects the RUSA guidelines areas of approachability and maintaining interest, alike. In so doing, the librarian maintains a sense of presence in the conversation and of welcoming the user's question, both important aspects of seeming approachable to users, especially in a text-based communication environment.

These greetings are perhaps the simplest of all the patterns of greetings observed, and make it very easy for the librarian to adhere to the RUSA guidelines regarding approachability. When one is confronted with as obvious a greeting as "hi" or "hello", it is only to be expected that one will reply in kind, as demonstrated by this except from a chat transcript. In the context of chat reference transactions, this kind of exchange indicates a level of librarian approachability: the librarian has proved that he or she is present and can be consulted in regards to a question the user has.

Greeting with a Question

34% of the transcripts examined began with the patron both greeting the librarian and posing a question in the same message. These messages often resembled email

messages, and in some cases the patron even signed his or her name as one might do at

the end of an email message. In these conversations, the patron's greeting elides with his

or her initial question, but the librarian's reciprocal response can often stand separately,

providing the air of approachability, if seeming slightly awkward in the context of the

conversation.

> PATRON: Hello, I put in a request for a book three days ago and
> was wondering if it is in yet? My name is PATRON NAME, and
> my PID is XXXXXXX.
> PATRON: The book was from storage
> LIBRARIAN: hello
> PATRON: hi

In the next exchange between the patron and the librarian, the librarian then

explains the best solution for this question to the user. As the question is effectively a

policy question, one of requesting a book kept at another location, an immediate answer

was likely appropriate for the situation. In other words, after this exchange of greetings,

the librarian then proceeds to answer the user's question. The issue of approachability

and presence becomes immaterial, but rather becomes related to the next part of the

reference transaction, in which the librarian must demonstrate interest in the user's

question.

In many conversations in which the patron begins with both a greeting and a

question, the patron then feels as though he or she ought to respond in kind to the

librarian's greeting if the librarian responds with a greeting:

> PATRON: hi. Is there a databases where I can search current
> magazines like glamour or cosmopolitan?
> LIBRARIAN: Hi I'm LIBRARIAN-NAME
> PATRON: hi
> LIBRARIAN: Let me see what I can find out about that for you
> PATRON: thanks

Again, in this example, the greeting or approachability aspect of the reference transaction has blended with the suggestion to maintain interest in the user's request. The user has stated a request; the librarian has greeted the user, and then proceeds to see to the user's information request.

In a certain regard, these conversations resemble the "superfluous greeting" which will be discussed below, in which a librarian proceeds to give the library user a greeting despite the user having already proceeded to the next part of the conversation. However, the librarian seeks to maintain that sense of approachability through the formality of an exchange of greetings, to prove that he or she is present and willing to listen to the user's request.

Potentially, given that users proceed to send their questions without an actual exchange of greetings, nor any certainty that there is a librarian present to answer these questions, there is some implication that the users already feel that the library and the librarian are approachable through that proxy of the library webpage or the chat software itself. The librarian's greeting as a sign of approachability is a reassurance, but not necessarily the first signal of approachability. The first signal is, possibly, out of the librarian's hands entirely.

Uncertain Greeting

One interesting phenomenon observed both in this examination and in other studies is the uncertainty that can be read into many opening remarks from library users. The opening query types range from "Hello?" to "Is anyone there?" suggesting an uncertainty on the part of the patron that one does not often see in a face-to-face reference transaction. Certainly there is a sense of sending a message off into the ether when one

uses a chat service. Unlike a face-to-face transaction or even a telephone transaction,

there is no obvious sign that someone else is actually answering these questions sent out

into the air. And, in many instances, the librarian is not facing the computer through

which the chat conversation will take place. Rather, the chat conversation is begun by

the user, and the librarian reports to the computer on which the software is installed and

proceeds to conduct the reference transaction. In other words, the chat conversation is, in

fact, sent out into the air, but it is retrieved by the librarians near at hand. In these

instances, it becomes absolutely imperative that the librarians respond with a greeting

themselves and assure the user that someone is present and listening to his or her

questions.

> PATRON: Hey, is anyone there?
> LIBRARIAN: yes
> PATRON: Hello!
> LIBRARIAN: how can we help

Although the chat software and the chat reference service may be familiar to

users, the prospect of sending a message out into the unknown is understandably

daunting. The user needs reassurance that his or her information need will be met, and

tentatively tests the metaphorical waters with a textual equivalent of a shout.

In some other instances, the patron begins with the querying greeting and then

goes on to see if anyone is actually present to attend to his or her question:

> PATRON: hello?
> PATRON: anyone there?
> LIBRARIAN: Hi. Do you have a question?
> PATRON: yes
> LIBRARIAN: I'll try to answer it.

In some regards, this type of greeting pattern is very much like the solitary

question pattern, in which a user will send out a greeting and then wait for a

response from the librarian. However, in this type of greeting pattern, the library user will then follow up his or her greeting with a question about whether a librarian is present. And in many instances in which the library user sends out a questioning greeting, several moments will elapse between the initial greeting and the follow-up question about whether a librarian is present. The amount of time that passes between the two comments is not universal and seems to depend on the library patron's temperament or patience with the chat reference system.

It is interesting to note the number of times in which a chat reference conversation will begin with an uncertain greeting. In these instances, it seems that the librarian's approachability is not as strong as might have been previously presumed, and so the library user is not as certain about the librarian's presence, let along his or her approachability.

Superfluous Greeting

Superfluous greetings are somewhat less common than the other greeting types observed in the examination of these chat reference transcripts, but they generally involve the librarian greeting the patron after the patron has posed a question. Often the placement of the greeting is somewhat awkward and often it is not acknowledged by the patron.

> PATRON: a group member of mine made a reservation for a private room
> PATRON: it's for tomorrow, Monday November 5th, is there a way that you would be able to pull up the time and what room number
> LIBRARIAN: Hi.
> PATRON: it is reserved under PATRON NAME's information I do believe
> PATRON: thank you

After this portion of this chat conversation, the librarian began looking for this patron's reservation for a group study room, and the initial greeting was not responded. Indeed, the conversation had already proceeded past the initial greetings, the library user was more interested in finding an answer to his or her concern, and the librarian's greeting was essentially pointless if it was an attempt to maintain a sense of approachability. Rather, if anything, it proves that there was a librarian present, but it does nothing to make the librarian seem friendly or eager to help. Any comments made after this particular section of this conversation may do more to support the librarian's appearance of approachability than an ineffective and overlooked greeting might.

However, in many instances, as with the solitary greetings, the librarian will continue to give the library user a greeting and the library user will often reciprocate, despite the fact that the conversation has already proceeded beyond this particular stage.

> PATRON: I am a 3L at UNIVERSITY NAME and there is a textbook that I found in your catalog that I wanted to check out since I cannot find it in my school's library.
> LIBRARIAN: Hello, this is LIBRARY-STAFF-NAME
> PATRON: Is there any sort of interlibrary loan system or consortium agreement between you and UNIVERSITY NAME Law that will enable me to check out the book?
> PATRON: Hi LIBRARY-STAFF-NAME

Immediately following this exchange, the librarian proceeded to answer the user's question, carrying on the rest of the reference transaction, despite having interrupted it with a greeting which was, perhaps, only for the sake of formality or a sense of approachability. If nothing else, this kind of structure makes the conversation somewhat awkward, as it shifts from the earlier stages to the later stages and back again.

Another situation in which the librarian will leave an unnecessary greeting in the course of a reference transaction often comes when the user has not opened the conversation with greeting and the librarian is eager to answer the library user's question.

> PATRON: Is there anyway for me to access medical resources
> online from home?
> LIBRARIAN: Hello- My name is LIBRARY-STAFF-NAME
> LIBRARIAN: are you looking for journals?
> PATRON: I can find journal titles, but then they say they are not
> available online

Here, as noted above, the librarian replies not with the beginning of an answer or a reference interview, but the beginning of the reference transaction, greeting the patron, but the immediately moving into questioning for further clarification of the user's question and need. The greeting is ignored thereafter by both the librarian and the library user.

Although somewhat unusual, this kind of pattern does still appear in the course of greetings from librarians and library users. However, there may be more issues at play in this kind of pattern than one might first consider. For example, in many instances, the library user may not be aware that the librarian is preparing an answer even as the user proceeds with his or her request. As such, the user's questions or inquiries can easily stack themselves on top of the librarian's somewhat late greeting. The librarian's greeting seems superfluous, but it is still an effort to make the librarian seem present, human, and approachable, even if the library user has already begun to elaborate on his or her need.

No Greeting from the Librarian

Of particular interest in regards to maintaining approachability, and to some degree maintaining a sense of interest in the patron's question, are those instances in which the librarian does not directly greet the patron at all.

In some situations, the reason behind this lack of a greeting is purely practical. For example, at times when the library desk is extremely busy and the librarians are forced to choose between patrons present in the library and patrons present only remotely, often the patrons who are present only remotely are asked to wait.

> PATRON: Hello, I just did a recall of two books that are checked out. I realized that there are copies of both available. How do I cancel my request?
> PATRON: Thanks
> LIBRARIAN: Hold on, we've just had someone come to the desk. We're getting the answer for you.
> LIBRARIAN: One moment please.

The librarian does not greet the patron but does inform the patron that librarians are present and will assist him or her with his or her question or need. This lack of a greeting stems from a practical purpose: the busy-ness of multi-tasking at the reference desk prevents the librarian from beginning a more in-depth conversation until after the patron who is at the reference desk has been helped. Arguably, the patron at the desk ought to be helped first, as he or she may have arrived first, and the chat arrived without the chat reference patron knowing that there were other patrons present in person. However, in regards to the librarian's approachability, he or she does speak to the patron and reassure the patron that there is a librarian present and that librarian will return in a few moments.

In other instances, rather than subject the library user to a superfluous greeting and a potentially circular conversation, the librarian proceeds on to the next part of the

reference interview, leaving out the greeting but moving forward in the reference transaction guidelines.

>PATRON: Hi -- could you help me learn where to locate a source to find information supporting the presumption that people, when surveyed as groups, are generally more critical than when they are surveyed as individuals? I have no idea where to begin to look.
>LIBRARIAN: is this in sociology?
>PATRON: It's not for a particular class or field of study, hence my confusion about where to start. Would sociology be a good place?

In the above transcript, the library user's need is already fairly apparent, or at least the basis of his or her question is fairly apparently, and the librarian proceeds to the reference interview rather than wander through the greetings. It is somewhat intuitive on the part of the librarian to go ahead and respond to the user's question rather than backtrack and give them a greeting. Instead of going backwards in the transaction process, the librarian would rather move forward. It is an understandable decision, though it is not necessarily perfectly in line with the reference guidelines

>PATRON: Hello. How do I access ARTStor? After I click on "login using ONYEN' ARTStor does not recognize me as being logged in?
>LIBRARIAN: are you off campus?
>PATRON: yes. I am using LINUX Ubuntu, Firefox 2.0

As before, here the librarian proceeds on to the user's question or to the reference interview, rather than wandering through the ritual of greeting. In defense of the librarians, in those instances where no greeting was given to the patron, the patron had often already stated an initial need or question, and the librarian thought it best to simply proceed to the next question or next part of the reference transaction so as to better serve the library user.

In the scheme of the RUSA guidelines, it is far preferable for the librarian to greet the patron or to otherwise somehow appear approachable regardless of the manner in which the patron has approached the librarian. Situations in which the librarian maintains a sense of approachability are numerous, though it is debatable whether a situation in which no greeting or acknowledgement is given can make the librarian seem as approachable as those situations in which the librarian says hello to the user, and sometimes goes as far as to give his or her name. However, in those instances in which a patron has begun a conversation with a request, it may serve the user better to proceed to the next part of the reference transaction without returning to the beginning before the user's beginning. Regardless, the general habit of conversation encourages librarians to speak to the patron before beginning the more complicated aspects of the reference interview, resulting in the 82% success rate in regards to giving library users some kind of greeting at the start of a reference transaction.

Interest

The appearance of maintaining interest is tied to the appearance of approachability in that it maintains the connections between the librarian and the library user and encourages the library user to proceed with his or her question. However, a great many of the signals given in maintaining a sense of interest in a user's question are nonverbal, consisting of body language, eye contact, and small vocalizations.

In a chat reference transaction, then, one is translating what are effectively vocal tics and body language into something written. It is perhaps in this section of the chat reference transaction that maintaining a virtual presence or a sense of reality in a virtual

environment is both most difficult and most crucial. Indeed, in 74% of the chat conversations examined, the librarians gave signals of maintained interest in the library user and his or her question at least once in the course of a reference transaction

One of the most common problems in chat reference transactions is the uncertainty that there is another person at the other end of the conversation. There are many chat reference transactions in which a user will ask if the librarian is, in fact, a real person and not a robot or a computer. In the same way that certain greetings come into the chat reference service as though they were being called into an empty room, so too do patrons reassure themselves that librarians are, in fact, present and assisting them. Without the visual and verbal evidence that there is someone present, but instead only a message screen, it is easy to see how a library user would want some reassurance that the librarian is there and aware of the user's question.

The simplest ways and most common ways for a librarian to indicate a continued interest in what the user is saying or asking often relies on the shortest words, "okay," "I see," "go on," "hold on," or "please wait." All of these words and phrases appeared numerous times in the course of the examination of the sample of chat reference transactions for this study.

> PATRON: im interested in surveys that have been conducted that
> try to answer this question/statement… [statement omitted]
> LIBRARIAN: Surveys--that would be marketing surveys to see if
> the method works?
> PATRON: yes
> LIBRARIAN: Okay
> LIBRARIAN: I'll look in journals for articles on marketing in
> relation to the topic
> LIBRARIAN: It might take a minute.

The remark, "okay," suggesting that the librarian understood the user's request, the explanation of where the librarian will be looking, and the caution that this search might take some time all emphasize the librarian's interest in the user's question. The use of "okay" in such a context is generally the most common example of displays of interest. Remarks like, "okay," and "I see" are used to indicate understanding on the part of the librarian and encourage the user to move on in his or her comments or questions. If the comments are not clear, then the librarian may proceed to asking the user questions for clarification. But to maintain interest is to maintain a presence in the virtual conversation, even in a situation in which one may be called away.

> PATRON: hi
> PATRON: are you there
> LIBRARIAN: Yeah...I'm helping a couple other people and will
> be back in a sec!
> PATRON: okay.
> LIBRARIAN: Hi! Sorry for the wait...how can I help?

Here, then, is a different sort of communication of interest. The librarian, being asked to keep watch over both the computers on which chat reference services are offered and the reference desk itself, maintains his or her interest in the patron's question by informing the patron about any delays in responses. It is a difficult thing to do properly, to maintain the appearance of interest in the user's question while still informing the user that one will not be as completely focused on the question as one could be. However, it is important to reassure the user that one has not disappeared completely, as when another user comes to the reference desk or when a question takes longer than anticipated to answer.

> PATRON: Hi, can you tell me the name of the citation style of
> Gregory Crane's book "Thucydides and the Ancient Simplicity?"
> It's an e-book available through UNC; the footnote style looks like

> this: "Crane 1996a," or "Nagy 1977." It seems a typical Classics citation style in the US, but I can't find out what it's called.
> LIBRARIAN: hi, justa moment while I read your question
> [Several minutes pass]
> PATRON: thanks for waiting . let me do a little checking
> [Several minutes pass]
> LIBRARIAN: sorry still working on itl

The librarian here proves a continued interest in the user's question and in finding an answer through these short comments. Although a face-to-face transaction would involve different comments and perhaps more comments between the two people involved, these small signals still inform the user that the librarian is devoted to solving this problem.

Maintaining interest in a user's question seems to be a relatively simple exercise in the course of a chat reference transaction. Those same signals that are used vocally in a face-to-face transaction can be carried over into a chat reference transaction, and the intention behind maintaining eye-contact can likewise be translated to a chat reference context. The short comments, such as "okay," or "I see," or "all right" can very easily be typed in the course of a chat reference transaction. The motivation behind eye-contact, as an indication of attentiveness, can be translated into comments to the user when the librarian is textually silent, indicating that the librarian is both still present and still interested. The translation of interest is possible in the context of a chat reference transaction, but will involve some work and some secondary attentiveness on the part of the librarian to make sure that the user is kept informed and aware of the librarian's awareness.

Listening and Inquiring

This particular section of the reference transaction guidelines is, in fact, the reference interview itself, in which the librarian asks the user specific and detailed questions in order to better understand what it is that the user might be asking without asking, and all while trying not to be too invasive of the user's own mental privacy. The context of a chat reference transaction seems as though it would make the translation of verbal questions to textual questions simple. However, some of the issues relating to the use of reference interview techniques lie on the librarians themselves.

Unfortunately, in only 66% of the transcripts analyzed did the librarian make further inquiries of the library user to better understand his or her question. Or, perhaps, in an astonishing 66% of the transcripts analyzed, the librarian made further inquiries of the library user in order to better understand his or her question. Either way, clarification was not requested in some chat reference transactions that were examined. In some cases, further inquiries or clarification were not especially necessary, such as in the "ready reference" questions or policy and operational questions. However, in some instances, the librarian began providing information without an assurance that he or she fully understood the user's question.

A certain set of patterns have emerged in the examinations of these chat transcripts. Generally speaking, the listening and inquiring reference interview section of the RUSA guidelines, as presented in a chat reference context, either basically follows the ideal of question and answer, or is answered too quickly and without enough information. In virtually no transcripts examined were there conversations that seemed to be too long or that asked too many question of library users.

Inquiring After the Question

This arrangement is perhaps the ideal form of the reference interview. After the patron asks a question or makes a statement of an information need, the librarian then asks the user several questions so as to better understand what the patron is thinking, as opposed to what he or she might be saying. It can be quite simple to conduct this kind of reference interview in a chat reference service, as the dialogue of a chat program encourages the question and answer arrangement of a reference interview.

> PATRON: Hey, I need some help finding information about surveying restaurant's internet capability and willingness
> PATRON: that is […] like […] um
> LIBRARIAN: Can you explain a little bit? […] Surveying the internet for restaurants?
> PATRON: I want to find information on Restaurants that use the internet as a tool to boost there revenue
> LIBRARIAN: Okay. Would you want to read business magazines that feature such restaurants?
> LIBRARIAN: I mean article in business magazines articles
> PATRON: Yeah, that'd be cool

From here, the conversation then moves into the actual search process through which the user could find the materials he or she is looking for. And, given the user's initial comment, it was absolutely imperative that the librarian ask for clarification as to what the library user meant so that the best resources could be recommended. At other times, the need for clarification is much more subtle, and the librarian must be aware of situations in which what first springs to mind may not be the best or most appropriate recommendation to the user.

> PATRON: and i was wondering if you could help me find some journal articles
> LIBRARIAN: Hi, this is LIBRARIAN-NAME. Do you have some citations, or are you interested in searching for articles?
> PATRON: i need to write a paper about african american english concerning whether second langage learning is helpful for AAE students

> LIBRARIAN: Okay. So more of an educational topic, or a
> linguistics topic?
> PATRON: well, sort of both […] preferbly linguistics i think

From this beginning, the librarian then begins to gather certain resources in which this user will likely find an answer to this question. These questions are fairly focused, and somewhat closed-ended, asking specifically what the direction of the topic is as opposed to a more open-ended discussion. In the inverse, in the case of those open-ended questions, a librarian will often ask the patron generally about what he or she would like to know so as to begin collecting some thoughts and information for the patron before presenting that information to the patron.

> PATRON: hello ref desk! I was wondering if you knew of a few
> sites to get statistics on babysitters, preferably in the state of NC,
> but can be nationally.
> LIBRARIAN: babysitters, hmm?
> LIBRARIAN: what would you like to know about babysitters?
> PATRON: well, i am looking for any kind of statistics on teenage
> babysitters...average age, where they live, really anything that is in
> a statistic would be helpful:-)

In this instance, rather than beginning by listing certain areas in which the library user could begin research, the librarian leaves the question open, allowing the user to explain in his or her own words that for which he or she is looking or thinks that he or she is looking. Often, as occurs later in this conversation, this first explanation will lead to further questions from the librarian and further answers from the user, thereby clarifying the user's request further.

These examples are very short versions of what can become very long conversations with multiple iterations of question and answer as the librarian requests clarification of the user's question, begins to search for materials, and then requests further clarification. These conversations, these interviews, are the

heart of the best reference transactions, as the American Library Association as so noted. However, at times, it can be tempting for a librarian to hurry up and conclude the transaction with the best information that he or she can find, completely disregarding this portion of the reference transaction and hurrying towards the next part of the transaction and the end. However, at other times, it can be appropriate to provide a user with the particular piece of information he or she requires, as in the various "ready reference" questions posed to the chat reference service, and in the policy and technology questions.

In the absence of this particular aspect of the reference transaction, the transaction proceeds immediately to the searching aspect of the reference transaction. In 34% of the transcripts examined, there were no further requests made for the clarification of the user's request. In some of these conversations, such as when the user had requested a specific item or resource by name, there was no need for further clarification as the request was, in fact, already clear. However, in other instances, with an apparent understanding of the user's request and a search strategy already in mind, the librarian would skip this stage of the reference transaction entirely and proceed to the next stage. In doing so, the librarian risked providing the user with inaccurate or poor information

This particular stage of the reference transaction, the reference interview itself, seems, in theory, to be easy to translate to the structure of a chat reference transaction. After all, the structure of the chat reference software itself is one of dialogue and conversation, which is the structure of the reference transaction and the reference interview in particular. However, in many instances, this part of the transaction process is overlooked, either because it is unnecessary or because the librarian feels it is

unnecessary. Although the next stage generally returns actual results to the user, failing

to consider the question behind the question that the user may actually have can result in

poor results.

Searching

       Of the five stages of a reference transaction, perhaps the results of the searching

stage are the most eagerly anticipated by both library user and librarian. In this section of

the transaction, the librarian develops a search strategy, explains the methods by which

he or she is searching, recommends particular resources or materials for the patron to use

first, and works with the user to begin to locate the information for which the user is

looking. The librarian is not expected to return with an immediate or complete answer

for the user. Indeed, the idea of the librarian performing the whole of the user's search

for the user is a topic of much debate, as is the issue of user education in the use of

library resources. However, the purpose of this stage of the reference transaction is to

equip the user with a beginning for seeking an answer for his or her question or need. In

some instances, this beginning may be a single resource or webpage, and in other

instances it may be a database or a collection of recommended resources through which

to find particular items. In any instance, a user will be given some kind of start to his or

her search. The rest of the search may be simple or involved, but the user will, ideally, be

given some kind of beginning or gateway to the information the user needs.

       In an astonishing 93% of the transcripts analyzed, the patron or user was given

some kind of answer. The issue, of course, comes in the nature of the answer, whether

that answer was correct, whether that answer was appropriate for the type of question,

and whether that answer was supported by user instruction, and whether that answer met the user's information need.

Given the difficulty in determining user satisfaction in the course of a reference transaction and especially in the course of a chat reference transaction, it was decided that for the sake of this study, if the user was given an answer and seemed to leave the conversation contentedly, then this stage of the reference transaction was considered to be complete. However, as has been discussed previously and studied several times, even users who are given incomplete or inaccurate answers often still report feeling satisfied at the conclusion of a reference transaction. The examination of these chat reference conversations indicates whether or not the librarian sought to provide the user with an answer to his or her information need. The manner in which this information was presented to the user does depend both on the librarian's adherence to the RUSA guidelines but also to the type of question asked by the user.

Ready Reference and Easy Answers

In many cases these user questions were, in fact, "ready reference" questions which could be answered with a short and direct reply, policy questions, technology questions, or informational questions. These were questions ranging from telephone numbers for different university departments to the library's hours of operation to assistance with renewing overdue books. "Ready reference" questions were generally questions in which a user asked for a specific resource or item and was given access or direction to that item or a direct answer from that item. A common example of a "ready reference" question were the numerous questions regarding citations that appeared in this sample of chat reference transcripts.

> PATRON: if i'm citing a lecture in a paper, is this the proper
> format: (Billman October 11, "Introduction to Chiefdoms and
> States")
> LIBRARIAN: which citation style are you using? MLA? Chicago?
> APA?
> LIBRARIAN: that will tell me which style guide to look it up in
> […] each style would have you cite the lecture differently
> PATRON: MLA
> LIBRARIAN: oh ok - let me grab the MLA guide, I'll be right
> back
> PATRON: okay thanks
> LIBRARIAN: ok I found it […] this is what it says
> LIBRARIAN: in a citation of an oral presentation, give the
> speaker's name; the title of the presentation, in quotation marks;
> the meeting and the sponsoring organization; the location, and the
> date
> LIBRARIAN: here's an example that they give [example copied
> and given]

Here the librarian retrieves the information completely for the user, and, notably, does in fact ask for clarification regarding the specifics of the user's question, a feature of the inquiring stage of the reference transaction. However, the user's need is relatively simple: the user needs an explanation of the proper method by which to cite a lecture in a paper. As such, rather than either request that the user either come to the library and request the *MLA handbook for writers of research papers* or consult a website that demonstrates various MLA-style citations, the librarian simply provides the patron with the information he or she needs. The parallel form of this service in a face-to-face reference transaction would be the librarian's retrieval of the handbook and possible assistance in looking for the answer. Or, if the user had telephoned the library, the librarian may very well have read the citation style to the user over the telephone, providing the direct and succinct answer to the user's question. In other words, there is relatively little difference between the transaction media, but perhaps the answer is presented a little more directly in the chat reference transaction.

Some of the more elaborate questions, though, involved library technology and online access to databases. In some cases, the librarian could direct the user to either a website that contained more complete instructions on how to use some item or database or advice for how to correct a problem. However, in some of these situations, the user needed specific or further instruction in how to make use of a particular resource or item. In a certain regard, these conversations bear more similarity to the methods of direction and user education present in some reference transactions, both face-to-face and virtual reference transactions. In some cases, it is absolutely necessary to provide the user with some instruction on using a resource and not just leave the user with the resource alone.

Teaching versus Directing

The great tension for librarians, as has been discussed above, is the internal debate over whether a user ought to be taught how to use resource and resources of resources so that he or she can learn how to answer his or her questions in the future without the librarian's help or instruction. There is debate even within the library community as to whether and how much users should be educated in the use of resources or the use of resources of resources (such as databases or lists of databases).

In many chat reference conversations, the librarian must provide some measure of user instruction, especially if the user is unfamiliar with the library's resources or access points to resources. The user may not be able to navigate so quickly through the database when he or she is unfamiliar with it as a librarian might. Also, a recommendation regarding approachability is to limit the amount of jargon used in the conversation, so words like "search limiter" and "Boolean" should either be avoided or explained. In any case, the user has two information needs, if not more: first to obtain the answer to his or

her question and second to learn to navigate the methods of access or resources to get to

that answer. To draw out a parallel, in order to find information in a book, one must first

learn how to read. So, in order to find information in a database, one must first learn how

to navigate the database. As such, in this part of a reference transaction, the librarian

must provide some instruction to the user in using these resources.

> PATRON: i'm looking for articles/information about lawsuits with
> tyson and perdue over issues of immigrant labor and poor
> conditions in their factories
> LIBRARIAN: Okay. Have you tried databases like Academic
> Search Premier yet?
> PATRON: not yet, i've used google scholar a little
> LIBRARIAN: These might be helpful, then. If you start at the main
> library home page (www.lib.unc.edu) and click on E-Resources,
> you'll see a sidebar listing several major databases that are a good
> place to start your research.
> LIBRARIAN: Once you are there, click on Academic Search
> Premier, and then try searching for different combinations of key
> terms for your topic.
> LIBRARIAN: Let me know if this is working for you...
> PATRON: okay, i'm on the ebsco host page
> LIBRARIAN: Okay. Try something like "labor and immigrant and
> factories" (without the quotes"
> LIBRARIAN: You can also search for the individual company
> names, if your report needs to focus on those.
> LIBRARIAN: I will check another database to see if it will help
> you on this topic...
> PATRON: okay thanks
> LIBRARIAN: It looks like LexisNexis Academic definitely also
> has materials on this specific topic.
> LIBRARIAN: So you can get there through the e-resources page as
> well.
> PATRON: yeah, i'll try that too

In this conversation, the library user was relatively familiar with the databases,

but perhaps not familiar with the library's database through which he or she would find

them. As such, the librarian provides instruction on how to navigate the library's site

through to the databases themselves. Librarians will also, at times, provide

recommendations to particular resources, items, or databases that the librarian thinks will

be of the best use to the user in answering his or her question after having come to a

better understanding of the user's question.

> PATRON: how do i find out when and where a word or term was
> first used?
> LIBRARIAN: Hold on one moment, please.
> LIBRARIAN: Hi. Where have you looked so far?
> PATRON: i've tried using various search engines, like the oxford
> reference online premium, but i really have no idea where to go.
> LIBRARIAN: have you tried Oxford English Dictionary online?
> PATRON: i think so. i'll try again.
> LIBRARIAN: if you go to the home page, then click E-Research
> Tools, letter O, scroll all the way to the end- it's right about Oxford
> Premium
> PATRON: thank you
> LIBRARIAN: sorry, ABOVE Oxford Premium
> LIBRARIAN: when you select a word, you can choose the
> etymology tab above it
> PATRON: i think that i have it now. thank you so much

The librarian here guides the user both to the resource itself on the library's

webpage and then into the resource itself, with an explanation on how to use it or where

to find the information the user is seeking. The librarian does not give the user the

answer to the question directly but rather shows the way to that information.

These two examples are, like the above discussion of the patterns of listening and

inquiring, two short samples of the patterns of discussion, explanation, and education that

can occur in the course of a chat reference transaction. Often there is as much dialogue

between the user and the librarian in the course of searching for information and

resources as there is in the librarian's initial reference interview of the user. Indeed, in

the course of a chat reference transaction's searching stage, where both the librarian and

the user are operating exclusively through text communication and without an

understanding of what the other person may be doing, there may be more questioning and

more reassurances than would be seen in the course of a face-to-face transaction. In a similar manner to the librarian's providing cues of continued interest in the patron's question, the librarian here must also be certain that the user has understood and is following along in the course of the instruction.

Information Pushing

The inverse of the proper execution of both the reference interview and the search process in the course of chat reference transaction has been, at times, referred to as "information pushing." The problem of "information pushing" has been observed by several researchers examining the uses and problems of chat reference transactions. In general, information pushing occurs when a librarian forces or pushes some particular piece of information or source onto a user, in particular after hearing the patron's initial question but without requesting additional clarification or information. Indeed, in choosing the best resources themselves and by neglecting to request clarification from the library user, they have completely circumvented the listening and inquiring section of the reference transaction and have proceeded to engage in a very bad form of the searching aspect of the transaction. Rather than answering the question as one would a complete reference question, the librarian instead answers the question as though it is a "ready reference" question. Rather than providing either a route to information or advice on reference to use, the librarian instead provides the user with an answer and simply an answer.

> PATRON: Hi, I was wondering if you could help me find statistics
> on what sources put out how much CO2 in the us--for example,
> what percentage of co2 emissions power plants, industry, auto
> drivers, etc. are responsible. Thanks!
> LIBRARIAN: hi. let me check on that
> PATRON: thanks

> LIBRARIAN: let me know if this link goes through: [link to online resource]
> PATRON: yes, success!
> LIBRARIAN: excellent
> LIBRARIAN: also this one: [link to online resource] […] there are some good tables on the second link

The conversation then concludes without any further inquiries or suggestions, and with no advice or education on how to locate these types of materials. Granted, the user's question was relatively simple: he or she needed statistics on carbon dioxide production in the United States. Apparently the resources that the librarian provided were basically satisfactory, fortunately. There are many instances in which a librarian's initial response to a patron's question is accurate, but there are equally many instances in which library users are given unsatisfactory information and they do not object.

It can be difficult at best to provide a user with information and provide the user with information about that information, such as instruction on how to locate it and similar materials or search techniques that were used to find it. In essence, one is asking the librarian to do two things at once: both to work on locating materials for the user and to educate the user in how to use those materials or how to find those materials. In a text-based medium, it can be difficult at best to keep up with the conversation and search for materials at the same time. And it can be tempting to provide a user with some information and leave the conversation with simply that assertion that the information should help.

However, to neglect to teach a user about the process of searching, about how to find materials or information, and how to use those materials is to undermine some of the purpose of the reference transaction. The reference transaction is intended to be an aid to library users, to help them better understand their questions and to help the librarian

better assist the users in finding information. The librarian, generally, is not expected to find the information, but rather to pave the way for the user to find it. At its best, the searching and user education section in these transcripts resembles a face-to-face transaction: the user and the librarian collaborate to find the best materials for the user to use and so answer his or her own information need. At its worst in the examination of these transcripts the aspect of searching and creating a search strategy was reduced to something resembling the response given to a "ready reference" question, ignoring any deeper levels of the user's question and certainly not teaching the user anything regarding library resources or searching techniques.

Follow-Up

In regard to the follow-up portion of the transaction guidelines, which is often considered the most difficult aspect of a chat transaction to remember or include, 42% of the conversations included a follow-up question or remark. And this number may not be entirely accurate due to the methods by which these sample transactions were collected. The shortest conversations in the original, largest sample were removed so as to narrow the sample to only the conversations long enough for proper observation. But in many instances, due to a slow patron response or uncertainty that the patron would respond at all, many librarians closed the chat conversation window before the patron had actually finished, so many of these conversation pieces that were removed were, in fact, nothing but "closing rituals" (Radford, 2006). The patron's final notes, whether "thank you," or "goodbye" would appear, then, in a new chat conversation window and would be record as an entirely new and very short conversation. So, in estimation, at least 42% of these

conversations included a librarian asking if the user had any more questions, the librarian

encouraging the user to contact the library again if he or she had further questions, or

perhaps both.

The closing of a chat reference transaction is, generally speaking, quite simple.

After the consultation with the library user, the inquiries and answers provided by the

reference interview, the results provided by any initial searching that has been

undertaken, and any repetition of any of these steps that require a second iteration, the

librarian often gives the user a final opportunity to ask any last questions.

> LIBRARIAN: anything else i can help you with?
> PATRON: no- i think thats it
> PATRON: Thank you again! Bye
> LIBRARIAN: alright, have a good day. Bye

If the user does not have any further questions, the conversation is over, and the

two disconnect through the chat software. Ideally, according to the RUSA guidelines, the

librarian should include some encouragement for the library user to return to the library if

he or she has any further questions. In this context, "returning to the library" would

comprise using the chat reference service again if the user has any more questions.

Technically speaking, and in the course of this examination of chat reference transcripts,

if the librarian did not include a comment about either whether the user's questions had

been answered or some encouragement to use the chat reference service again, the

follow-up section of the reference transaction was considered to be incomplete.

> LIBRARIAN: Is there anything else I can help you with?
> PATRON: no that will be al..thanks so much
> LIBRARIAN: Sure. Good luck. If you need any further assistance,
> don't hesitate to contact us.
> PATRON: ok thanks so much
> LIBRARIAN: You're welcome. Thanks for using Ask a Librarian.
> PATRON: have a great day

In the above conversation, the librarian both asks if the user's questions have been answered, affording the user an opportunity to ask any more questions he or she might have or to request clarification and assistance with any of the results he or she may have been given, and the librarian encourages the user to return if the user needs further assistance. Presumably, the user will understand this comment to mean either with this particular project or with projects in the future.

However, despite the simplicity that such an end to a conversation might present, there are several situations in which the closing of a conversation is neither so easy nor so clear.

Signing Off

In some conversations, despite the patron having thanked the librarian, and the librarian having concluded the conversation with the recommended closing comments, the end of the conversation may not be entirely clear to either patron or librarian. The conversation is over, but in the absence of the patron's ability to walk away into the library stacks or out of the library, it can be unclear as to whether the conversation is truly over. In the same way that library users will ask if there is anyone present to answer a question, and librarians will try to maintain interest and dialogue, librarians will also try to make it abundantly clear that a conversation is over.

> PATRON: ok, thanks a bunch, you've been ultra helpful
> LIBRARIAN: no problem - thanks for using the "Ask a Librarian"
> IM service
> LIBRARIAN: Good Luck with your paper
> LIBRARIAN: if you don't have any other questions right now, I
> will disconnect our session
> PATRON: ok
> LIBRARIAN: bye then

The librarian has concluded the conversation with something similar to the inquiry as to whether the library user's questions have been completely answered, albeit as a statement rather than a question. Likewise, the phrase, "I will disconnect our session" is both unusual and slightly robotic. If greetings are as much a sign of approachability, then so too should the conclusions be used as a sign of approachability. Although this style of closing makes the end of the conversation immensely apparent, it can also seem off-putting, strict, or cold. The balance between clarity and friendliness can be a difficult one to maintain in a text-based environment.

The Vanishing Act

In contrast to the librarian's clear end to the conversation above, in several of the chat reference transcripts examined, the patron would effectively vanish before the conclusion of the chat reference transaction. These conversations are often disrupted in the middle of the reference transaction, sometimes before the librarian had even fully clarified the library user's question.

> LIBRARIAN: Do you have company names?
> PATRON: singapore aircraft leasing enterprise […] aka SALE
> […] it was sold to BOC at the end of last year […] so the
> information is very limited
> LIBRARIAN: Are you looking for news type information such as
> you would find in Lexis-Nexis and in business periodicals?
> LIBRARIAN: Here is a list of databases that the library has
> grouped under Business. If you search in Business Source Premier
> for, singapore aircraft leasing enterprise, you will find some
> articles.
> LIBRARIAN: Is that what you want? Articles in Business
> periodicals?
> [A few minutes pass]
> LIBRARIAN: Are you still there?

However, in some cases, the library user would vanish at some point during the course of the librarian's closing comments and final remarks to the library user.

Generally, it would seem that the library user has obtained the information he or she

needs and has completed his or her "closing ritual," and does not assume that the librarian

will have anything more to say, or perhaps does not wish to wait (Radford, 2006).

> PATRON: Thanks
> LIBRARIAN: you're welcome!
> PATRON: I really appreciate it!
> LIBRARIAN: is there anything else we can help you with?

The conversation then ends without any further remark from the library user.

However, before considering this pattern to be too common, it is worthwhile to note that

these conversations were sometimes involved in the portion of the transcripts from which

portions were lost. In many of these instances, the librarian would close the chat window

after the library user had been silent for some time, assuming that the user had left the

computer, or begun his or her research and was ignoring the chat window, or had already

closed the chat window.

Still, the "closing ritual" that one would expect to be carried out has been

completed: the patron has thanked the librarian, and the librarian has reciprocated those

remarks. In the library user's mind, there is likely nothing more to be said and of course

would not presume that the librarian would have anything more to say or that the

librarian might have a prescribed closing comment that he or she should say.

The Long Goodbye

In a slight variation on the same theme, in some instances the patron seems to

have disappeared, but then reappears quite suddenly after a long silence. Unfortunately,

in this example, the librarian did not properly complete the requirements for the closing

and follow-up section of the reference transaction. However, the patron did disappear

and reappear after a long silence that lasted several minutes, according to the timestamps on the original transcripts.

> PATRON: Thanks so much for your help
> PATRON: I was hoping they would be somehwere I couldnt see online!
> LIBRARIAN: Sorry nothing turned up. Good luck! Bye.
> [A few minutes]
> PATRON: Bye!

Although the librarian did not technically complete the follow-up section of the reference transaction guidelines, he or she did encourage the library user and say goodbye, only to have the library user reappear a few minutes later to answer those comments. It is difficult to say what motivates patrons to return these remarks some time after they have been given by the librarian. In some instances, these final comments from the patrons made up the very short conversations that were removed during the initial collection of transcripts for this examination. The librarian would have already closed the chat window after having concluded the reference transaction and given any follow-up comments necessary. Some time thereafter, the same library patron may have reappeared in a new window either thanking the librarian again for his or her help or simply saying goodbye.

It seems quite simple and intuitive to say goodbye at the end of a chat reference transaction, in the same way it seems simple and intuitive to say hello at the beginning of a chat reference transaction. However, the RUSA guidelines recommendation that the librarian ask if the user's information needs have been met can be difficult to include. Likewise, it can be cumbersome for librarians to include some encouragement to return to the library or to make use of the chat

reference service again. However, in order to be certain that the user is at least

satisfied and to give a signal that the user is welcome to more help, it would be

sensible to include such a remark as a thank you, and some encouragement to

return. It can be difficult to include such remarks if the user disappears or signs

off quickly, or if the conversation does not turn in such a direction that an

opportune moment presents itself. However, the reasoning behind these

comments and in the RUSA guidelines is sensible, and the meaning of these kinds

of closings is clear.

Expecting the Unexpected

However, despite the best efforts of the RUSA guidelines to maintain order, there

are numerous examples both in the transcripts examined here and in the transcripts

examined in other studies relating to the unexpected uses and peculiar problems of chat

conversations. Perhaps in no other samples does one see such a breakdown in the RUSA

guidelines as in a chat reference transaction which ceases to resemble a reference

transaction in anyway. These problems relate to the speed at which a message is typed

and the order in which it is received by each party in the conversation, abusive chat

reference service users, the use of prepared or "canned" messages to inform users about

their chat service, and unusual requests put through the chat reference service. All of

these situations, including those that are part of the chat software programs like canned

messages, can make the chat reference transaction more difficult to carry out and to carry

out successfully.

Out of Order and Catching Up

One of the most basic problems that is encountered in the course of a chat reference transaction is to have the conversation appear out of order. Often, this problem stems from the librarian and the user both typing responses or comments at the same time and having them appear either simultaneously or at the wrong place in the conversation. For example, the librarian may begin to ask the user more specific questions to better understand his or her research problem or question, but these questions may overlap with the library user's voluntary explanation of his or her research.

> PATRON: Hello
> PATRON: I am trying to do research on Argentina
> PATRON: and I would like to see La Nacion
> LIBRARIAN: Hi, this is LIBRARY-STAFF-NAME.
> PATRON: and other periodicals that are Argentine.
> PATRON: Hi, LIBRARY-STAFF-NAME
> PATRON: I was wondering where I can see what UNIVERSITY NAME has
> LIBRARIAN: Let me search the catalog.
> PATRON: before I come to the library.
> PATRON: Okay, and of La Nacion, La Opinion, Clarin, or Pagina/12
> LIBRARIAN: We have current issues of La Nacion in the Newspaper Area on the 1st floor.
> PATRON: I need to see any of those four.
> PATRON: Okay, but no annals?
> LIBRARIAN: LIke in microform?
> LIBRARIAN: What do you mean by no annals?
> LIBRARIAN: Microforms?
> PATRON: Like I am focusing on the 70s.
> PATRON: Sure, whatever form it would be in
> LIBRARIAN: Let me check.

Although the conversation is basically coherent, in that it is clear that the user is seeking several Spanish-language newspaper publications, this conversation is also clearly out of order. The librarian begins performing a catalog search before the library patron has entirely explained his or her question, but the patron's question did look as

though it were finished. The librarian and the patron then struggle to catch up and keep

up with the flow of the conversation and the reference transaction. In some other

instances, the conversation becomes difficult to follow, . It can be supposed that in some

instances, this kind of wrong order for the parts in the dialogue between librarian and user

could come if one is slow in a response, leading the other to suppose that he or she is

finished with a thought, when in reality the response is only delayed and the thought it

not complete.

The fault of a badly ordered conversation could lie on the patron or the librarian

or the chat software program itself. It may be that either person involved in the

conversation was not quite patient enough or did not wait long enough for a complete

response. However, there may have been no signal to indicate that the other person was

"talking" at the time. After all, there are sometimes no immediate cues when a person in

a chat conversation is preparing a response. T he response only appears after the person

has sent the message, easily leading to out of order chat conversations. .

Abusive Patrons

One unfortunate aspect of having a chat reference service is the potential for

abuse or prank chats. Although, perhaps it is fortunate that in the course of examining

these chat reference transaction transcripts, there were relatively few overtly abusive

patrons to be found, and fewer chat transcripts still that could be considered obviously a

prank or a joke. However, there are some instances in which a library user was abusive

towards the librarians.

> PATRON: Hi, I am looking for an article by Bloss called
> "Cohabiting, Decohabiting, Recohabiting: The Routes Followed by
> Two Generations of Women." Could you help me?

LIBRARIAN: Hi - I am working with a patron right now - you are welcome to hold on or close out and try again later.
PATRON: fine
PATRON: poop head
PATRON: u done yet?
PATRON: I am looking for an article by Bloss called "Cohabiting, Decohabiting, Recohabiting: The Routes Followed by Two Generations of Women." Could you help me?
LIBRARIAN: not yet
PATRON: Anytime plz WOMAN
PATRON: **COUGH COUGH** ** SIGHS**
LIBRARIAN: almost done
PATRON: okay
LIBRARIAN: do you have the journal name - the one that your article is in?

Perhaps it is needless to say that this kind of impatience, because it does seem like impatience and boredom that brings on the name-calling and somewhat dramatic commentary from the library user, would make assisting this user trying at best. To the librarian's credit, he or she does not respond to the name-calling, is not punitive, and simply proceeds with the reference transaction. Indeed, despite the name-calling, the librarian tries to keep the user informed as to when he or she will return to the chat conversation.

It is interesting that the library user would proceed to say things like, "Anytime plz WOMAN," suggesting both frustration and making an attempt to insult the librarian in the chat window when it is unlikely that a user would ever say these things either in a face-to-face reference transaction or a telephone reference transaction. Indeed, entire studies have been done on the nature of rude and insulting library users in chat reference services and the role of anonymity in their rudeness (Maness, Naper, and Chaudhuri, 2009). Perhaps it speaks to the stereotypes of the profession that the user, in this attempt to be insulting, assumes that the librarian is female when the librarian has made no

identifying remarks as yet and very few remarks at all. Likewise, there were several users who seemed rather bored and began asking the library staff personal questions ("r u a boy or a girl?") in this sample of chat reference transactions. While not as overtly rude as the conversation given as an example, these patrons were likely just as bored, but their comments and questions were still regarded as inappropriate, and the librarians in their responses did seems lightly uncertain about dealing with these patrons and their questions.

However facing rude patrons, and there are many patrons recorded in other studies that are far worse than this small example, can make completing the reference transaction as recommended in the RUSA guidelines extremely difficult. Often, there is no actual question from the patron, or the question is only a method to attract the librarian's attention, and so the reference transaction process becomes completely useless. Indeed, there is no point to trying to conduct a reference transaction with a patron who intends to insult and tease the librarians. Moreover, it is an unfortunate abuse of the chat reference service to a degree that is very unlikely to be encountered in any face-to-face reference transaction. It is a phenomenon almost unique to chat reference services to have library users using the service as a form of entertainment rather than a library service.

Canned Messages

The use of prepared or so-called "canned" messages in a chat reference transaction can be useful in that it provides the user with some information about the situation of his or her question but these remarks are often made automatically through the chat software program when the program is already busy with a certain number of

transactions already in progress. In these cases, a library user is sent an informative

message, not unlike a hold message, to inform them that their message has been received

but that they will have to wait for a response.

> PATRON: hello
> PATRON: does UNC have any kind of database that explains
> chemical compounds?
> LIBRARIAN: Sorry for the wait. It looks like all of our librarians
> are busy for the moment. We'll be with you as soon as possible.
> You are number 2 in line.
> [Several minutes pass]
> LIBRARIAN: Sorry for the wait. It looks like all of our librarians
> are busy for the moment. We'll be with you as soon as possible.
> You are next in line.
> [Several minutes pass]
> LIBRARIAN: hi, let me check, that's not my area of expertise.

In these situations, interestingly, the librarian has in some ways already greeted

the patron without greeting the patron: the patron is assured that his or her message has

been received and that there are librarians present to assist, but they are busy for the

moment and will return to the patron's question as soon as possible. Thereafter, of

course, the librarian resumes the reference transaction. But for the duration of the time

during which the patron receives these canned messages, he or she is neither in the

process of the reference transaction nor entirely out of it. And in several of these

situations in which a library user received a canned message from the chat reference

service, the reference transaction proceeded in an unusual fashion from there, with certain

sections combined or missed, such as the greeting and the suggestions of interest. The

use of canned messages does change the process of a chat transaction in some regard, and

it is certainly not produced by the librarian, thereby making it neither part of the chat

reference transaction nor entirely separate from it.

However, care should be taken in using these kinds of messages, in case users suspect that the person answering their reference questions is not a person at all. With the rise of so-called "chat bots," or compute programs that can more or less imitate human conversation and drastic improvements in the structure of search engines, it is perhaps not so surprising that library users might become suspicious of a librarian who does not, to them, seem quite human.

> PATRON: r u a bot?
> LIBRARIAN: No I'm a real flesh and blood person.
> PATRON: r u sure cuz u sound so profesional
> LIBRARIAN: Habit, I guess.
> PATRON: oh well thanx anywayz
> LIBRARIAN Sure, have a nice day!
> PATRON: bye...
> LIBRARIAN: bye

Perhaps it could be considered a compliment to be referred to as professional – issue of approachability.

Unusual Requests

One unanticipated situation in which the reference transaction model breaks down is in unexpected or potentially inappropriate use of the chat reference service. Studies regarding the unusual or uncommon use of technology and communication media such as chat reference services are numerous and cross the boundaries of disciplines, and extend beyond the realm of simply rude or teasing users of these technologies. So beyond the teasing users who find entertainment in the discomfort or trouble of the librarians answering their questions or comments, there are those who put the library's chat reference service to unusual, though not inappropriate, uses. Indeed, some of these uses may almost be considered practical. Take for example, one unusual request from a patron:

PATRON: hello
PATRON: can you do me a favor real quick
LIBRARIAN: hello
 LIBRARIAN: may i help you?
PATRON: yeah, you're the only buddy on my aol who is around
PATRON: can you call my cell phone please?
LIBRARIAN: ok
PATRON: XXX-XXX-XXXX
LIBRARIAN: what's the number?
LIBRARIAN: ok
LIBRARIAN: just a minute
PATRON: ok
PATRON: thanks
LIBRARIAN: did you misplace your phone or something? just
curious
PATRON: yeah
LIBRARIAN: ok great.
PATRON: i found it...it was behind my couch
LIBRARIAN: ok do you need anything else?
PATRON: nah i'm good
PATRON: thank you
LIBRARIAN: you're welcome.   bye!

Other examples included in the sample transactions that were examined included

a conversation from a user who was testing the chat feature on his or her Nintendo Wii

gaming platform, along with a few other conversations that began with the user simply

experimenting with the chat reference service in general and who wanted to see "if it was

working."

The question, perhaps, is whether it is within the realm of the library's chat

reference service to provide this kind of assistance to users. Granted, it is not necessarily

the job of the librarian to entertain a library user when he or she wants to find someone to

talk to and the only person apparently available is the librarian. But it is less certain as to

whether it is beyond the scope of the librarian's services to help a library user who has

lost his or her cellular phone somewhere in a room. Certainly the librarians are present

and online to provide assistance, and they do have the means to call this user and help.

Likewise, if he or she were in the library building, the librarians would likely help with looking for this lost phone or direct the patron to whatever lost and found there might be in the library. The library's service is present and the librarians are willing to help. Perhaps it should be expected that the library's chat reference service will not be used purely for reference questions. Indeed, the chat reference service should not be expected to be kept for purely reference question any more than the library itself is expected to be kept purely for reference questions.

The chat reference service, while intended to provide a place for the librarian in the realm of electronic resources and materials, is not always used as one would intend. Patrons can be rude or demanding, the questions can be unusual or outside the intended scope of the chat reference service, or the chat software program itself may intervene in the process of the chat reference transaction. However, as demonstrated by a 90% success rate in returning an answer to a library user, the chat reference service examined here is used as the library might have intended: as a new means by which to contact the library and to put the librarian in the realm of the digital. The reference transaction through which the librarian communicates and comes to understand a library user's need is translated as best it can be to the new situation of the chat reference service, and, ideally, the library user is served as well as in a face-to-face transaction in this new medium of communication.

Summary and Conclusions

The process of the reference transaction is by no means an exact science or a precise program. It is not a strict structure, but a series of guidelines, with

recommendations of best practices for librarians to follow in the course of a conversation towards an answer to a library user's question. Even the American Library Association acknowledges that this structure is a map to a successful reference transaction, and not a formula to be followed. In general, thanks to nearly half a century of refinement of these guidelines, the reference transaction has become a fairly successful and intuitive set of directions. The process resembles a conversation, an interview—indeed, the most significant aspect of the process, in which the librarian comes to better understand the user's need is called a reference interview. It is not entirely successful in every application, but it is, generally, the best solution that can be found for the course of these conversations and these needs.

As new technology has grown in popularity and has been applied to library use, and particularly to reference service use, the reference transaction has had to grow and change and bend to accommodate these new technologies. The guidelines of the chat reference transaction can be translated into the context of these different transactions, though not without some difficulty and not without some significant changes. Consider, for example, the changes that must be put in place for something as familiar as a reference transaction conducted by telephone. Now, instead of being able to rely on visual cues, the librarian and the library user both now must rely only on auditory cues. To take this example another step further, consider the changes that must be put in place for a reference transaction that takes place in a text-based medium such as a chat reference transaction. In the same way that the medium of the telephone and auditory-only communication changes the reference transaction, so too does the medium of text-only communication in a chat reference conversation. The instances in which either the

patron or the librarian break from the pattern of the RUSA guidelines in a chat reference transaction are, at least in part, brought about by the medium of chat reference.

In general, as demonstrated by the chat reference transactions examined here, librarians do adhere fairly closely to the five parts of the chat reference transaction as explained by the Research and User Services Association. However, this adherence was by no means perfect, nor was it expected to be perfect. Instead, the points at which it varied began to take on some patterns and shapes as more conversations were examined.

There is no prescribed method by which a librarian can be "approachable" in the context of a chat reference transaction. The RUSA guidelines specify that "approachability" refers to the presence of information about the chat reference service itself, not necessarily the librarian or the librarian's presence. Instead, in the context of a chat reference transaction, and from the very beginning, rather than acting with an awareness of the presence of a librarian prepared to assist them (approachability), patrons find that they must to speak to the empty air and wait for a response. In many cases, this involved a very short greeting, to which the librarian responded in kind, and the reference transaction proceeded from there.

But in some conversations sampled, this means that the patron almost tentatively asks if anyone is even there, and in others the patron simply states his or her question and waits for an answer. And so, when patrons send out greetings into the ether, the librarian must immediately create a presence for himself or herself and rebuild that approachability and friendliness that is more easily maintained in person or over the telephone. In other instances, in which patrons use the initial greeting as a platform from which to pose their initial questions for the librarian, obliging the librarian either to create a presence and a

sense of approachability and then proceed into the reference transaction or to forgo creating that approachability and immediately beginning the reference transaction. In omitting a greeting the librarian risked appearing robotic or unfriendly to the patron, but forcing a greeting into a conversation already in progress could prove to be equally awkward.

Chat reference transactions also put the librarian in an interestingly passive position. Rather than taking any initiative in appearing overtly approachable or eager to help, the librarian must sit and wait for a library user to appear and to make the first contact in a chat reference transaction. The face-to-face reference transaction may, arguably, put the librarian in the same position, as the librarian waits at the reference desk for a user to approach. But in a face-to-face situation, as has been remarked on previously, the nonverbal and visual and even verbal cues which present to another a sense of approachability are completely absent in a chat reference transaction. Rather than appearing approachable, the librarian must appear approachable by proxy, through the software utilized or through the library's website. It is therefore imperative that the librarian respond in an approachable way and in an appropriate way when a user does contact the library's chat reference service.

However, greetings of some kind were often present and were simpler to include than some other sections of the reference transaction. Generally speaking, librarians responded with brief greetings, usually "hi" or "hello" and sometimes accompanied this greeting with an encouragement to continue, such as "how may I help you?" It should be noted that some chat reference systems, such as the chat widget embedded in the library website now being used by the reference department at Walter Royal Davis at the

University of North Carolina at Chapel Hill, will continue to signal the library staff with an auditory ringing signal and a flashing chat window until the librarian responds to the user and "claims" the chat conversation. In such situations, the most common response to the new chat conversation is a greeting, even something so simple as "hi," if only to stop the chat software from continuing to signal that a new chat question has arrived.

Still, in the process of translating the idea of "approachability" to a text-based medium, rather than any kind of eye-contact or body language, all that remains are the vocalizations without the voice: the declared welcomes to the user and the encouragement to ask a question. As a whole, the idea of approachability can be translated fairly easily into chat reference transactions and was seen frequently in the chat reference transcripts examined here.

Meanwhile, greetings or approachability and maintaining interest proved to be related in the course of a chat reference transaction. Unlike a face-to-face reference transaction, where approachability is more easily transmitted through nonverbal communication and interest is more easily transmitted through non-written communication, both approachability and interest are transmitted in a written form in a chat reference transaction. Unlike the suggestion of the RUSA guidelines, in the course of a chat reference transaction, approachability and interest are elided by the user and the librarian. Rather than establishing a sense of being approachable and then proceeding to show interest in a user's question, in many chat reference transactions, the librarian goes directly from a greeting (the chat reference equivalent of availability and approachability) to showing interest in the user's topic. This particular pattern is especially prevalent in situations in which a user begins the conversation with a greeting attached to a question.

And, as with approachability, in the absence of non-verbal communication, all that remains are the vocalizations without the voice. Librarians relied on the typed equivalents of verbal tics to encourage library users to continue with their explanations or comments in the course of the reference transaction. Generally these comments were very brief, one word replies, but they were signal enough to the library user that a librarian was listening.

In another difference from the signals given in a face-to-face transaction, in a chat reference transaction, library users needed assurance that a librarian was not only interested but actually present and attending to the question. Since neither the librarian nor the library user can see one another, signals regarding the librarian's presence and work on the library user's question were more important than they might have been in a face-to-face transaction. In so doing, the librarian both proves his or her continued interest in the library user's question and can keep the library user updated on the search process itself. But, perhaps more importantly, these small remarks prove to the user that the librarian is still present. After all, numerous chat conversations begin with the tentative questions of the users. There is no sense of certainty that anyone will answer nor that anyone will stay, not when there are so few signals as to the presence of another person on the other end of the conversation beyond words appearing at irregular intervals. Librarians examined in these sample reference transaction transcripts made use of these brief comments of interest quite frequently, though they often combined these signals of interest together with the initial questions of the reference interview, indicating interest as well as gathering more information about the user's question.

Many newer chat and instant messenger software programs have realized the importance of nonverbal signals that one is about to speak or that one is still present in the conversation—beyond the visual signal of a person standing nearby. In an attempt to make conversation via chat easier to negotiate, many software programs now include a typing cue sent to the other person in a chat conversation with one person begins to type in the chat window. The program detects the typing and sends a signal to the other user, usually displayed as "PATRON/LIBRARIAN is typing…" to give the each user a signal as to when the other is preparing a response. In providing even that much of a signal, a library user or a librarian can be assured that the other person is present, is paying attention, and is about to speak. This phenomenon can be observed in the newest form of the chat widget used in the Walter Royal Davis library's reference department. With such a cue, not only do out of order conversations become much less common as does the confusion that can sometimes accompany such conversations, but there is an increased sense of presence and interest in the conversation. That small signal indicates that someone is there on the other end of the line and thinking.

And through that signal, the librarian essentially listens to the user's comments before they appear in the chat program window. This portion of the transaction is the focus of the transaction, as it is the reference interview. The reference interview itself, the process of the librarian asking focused questions of the user in order to better understand the user's question or the user's unknown and unasked question, has been examined by numerous scholars over the course of at least forty years, leading to a better understanding of the process and the types of questions that ought to be asked.

Translating such a conversation is surprisingly easy and certainly necessary in the context of a chat reference transaction. Often, the library user's initial request is unclear, possibly misspelled, and potentially incomplete. Rather than simply speaking to ask the librarian a question, the effort involved in typing a question often makes users ask shorter, less complete questions at the beginning of the transaction. It becomes absolutely imperative that the librarian ask the user questions to better focus the library user's search strategy.

However, it is unfortunate to see how rarely this particular aspect of the reference transaction is carried out properly in a chat reference transaction. In many cases, the librarian takes the information given by the library user and immediately begins a search, even if a search would not yet be appropriate. A premature search can lead to poor results and dissatisfaction for the library user, not to mention the librarian and user having then to backtrack back to the reference interview itself and start over again from the beginning.

It is understandable that it can be difficult to want to either ask or answer a series of complicated questions in a chat reference conversation. Chat reference transactions have a reputation of being fast and efficient. And the effort of typing out questions and answers can be grating, especially when one's information need is relatively simple. Indeed, in many chat reference transcripts examined, the question asked was a fairly direct, "ready reference" type question, where the user wanted and needed some specific piece of information, rather than a search strategy and recommendations of resources.

But given the ease with which this aspect of the reference transaction, the series of questions and answers by which the librarian comes to a better understanding of the

library user's question and thereby to better information avenues for the user, could be translated into the chat reference context, it would be far better for both the librarian and the library user to expend the effort to ask and answer all the questions necessary before embarking on any search.

Conducting the searching section of the reference transaction proved to be unexpectedly difficult, as indicated by the results that were presented to library users in the chat transcripts examined. In many instances, library users were given results without a full understanding of their questions, or the results were presented without much explanation or user education as to where to find these resources, how best to use these resources, and how to find other similar resources.

Admittedly, it is difficult, to say the least, to try and explain a search process, especially to someone who is not nearby, cannot see the same screen as the librarian, may not be familiar with the tools to which the librarian is referring, and is communicating through a text-only medium. The only option is to try and explain one's search to the user while conducting the search, a process that demands the librarian divide his or her attention between these multiple projects, and requires the user to have patience with both the explanation and the search process itself. Many users and librarians do not have the patience to endure this kind of a transaction, nor is the chat reference service entirely designed to support long conversations. To ease some of the difficulties associated with trying to keep a librarian and a user on the same page, so to speak, many libraries have implemented screen-sharing or co-browsing options, through which the librarian can see the screen of the user and the user can see the screen of the librarian. In this way, the librarian can guide the user to particular resources in much the same way that a librarian

might guide a patron to a particular part of a physical library. The Walter Royal Davis library is not among these libraries that use this screen-sharing software, and so the librarians must either explain their search strategy during or after the search itself or must simply retrieve the best results for the user possible.

However, it could be counted as a success that 93% of the chat reference transcripts examined included some answer for the library user. Effectively no virtual reference patrons were sent away metaphorically empty handed. And, it would seem, that many of the users were, in fact, quite satisfied with the answers they were given, as the user's comments in reply to the librarian's closing remarks and follow-up questions would indicate.

Interestingly, though, of the five parts of the reference transaction guidelines, providing a follow-up remark in a chat reference transaction seemed most difficult. It must be remembered that some of the follow-up remarks may have been lost in the course of the data collection for this pool of sample transcripts, as the very smallest files and very shortest conversations were omitted in the hopes of observing more patterns in longer conversations.

But many of these short conversations may have included the librarian's closing and follow-up remarks, and may have exclusively been the librarian's final remarks to the library user. It is unfair, perhaps to say that this aspect of the reference transaction is absent in any greater amount than any other part of the reference transaction. However, in many transcripts that were examined, the librarian and the user did thank each other and tell each other goodbye, even if the librarian did not include a question as to whether the library user's information need had been "completely answered" or any

encouragement to return to the library again. In other words, there was a "closing ritual" in which both librarian and user ended the conversation, but there was no encouragement to return to the library with further questions nor any inquiry as to whether the information provided was the information the user needed (Radford, 2006).

It is a fairly natural and intuitive action to close a conversation with some kind of goodbye, and the RUSA guidelines are based on the format of a conversation. However, the guidelines stipulate the types of goodbyes that assure that the librarian has properly answered the user's question and that the user feels satisfied with the library transaction. But other kinds of goodbyes can serve the same purpose, and in some instances the library user supplies the answers to the librarian unbidden and very enthusiastically. The purpose of the reference transaction is to answer a library user's information need and to provide them with answers to a question. The follow-up comments are as much for the librarian, to know that the reference interview has been carried out basically properly, as it is to close the conversation and give the library user one final opportunity to ask any last questions.

In general, greetings in the course of a chat reference transactions took the role of approachability, but were not universal nor identical. Signals of interest resembled their vocal counterparts in a face-to-face reference transaction. Listening and inquiring about the user's question was sometimes overlooked in the haste to retrieve an answer for the user, but could be put to better use in this supportive format. Searching often involved simply providing resources or direct access to resources for users rather than any explanation or user education regarding these sources. However, users were almost always given some kind of answer in response to their questions, an overwhelming

success in that regard. And, finally, it was difficult at times for the librarian to remember to include both a question as to whether the library user's information needs had been met and an encouragement to return to the library in the future, but nearly all the transcripts examined included some closing to the conversation.

In short, although the different aspects of the RUSA guidelines for reference transactions were present in these chat reference transactions, they were modified by the constraints and peculiarities of the nature of the medium itself: text-based, with all cues and signals and hints coming to the user through written cues and direct comments.

Librarians can, if thoroughly trained, maintain a strict adherence to the RUSA guidelines for a reference transaction, and those guidelines can be translated to a chat reference transaction. The pattern is modeled on a conversation, and it is possible to keep to a conversational script for the sake of a structure. Many businesses and organizations with online chat services require their employees to keep to a script, which often leads to frustration on the part of the customer or patron. And it is often the patrons and library users who often do not behave as one would expect, and so make it difficult for the librarian to keep so strictly to the guidelines. Certainly, there is no reason for an average library user to be familiar with the process of the reference transaction, and so there is no reason to expect a library user to keep to that process. As would probably be expected, the patron generally breaks first from the pattern of the RUSA guidelines in the course of a chat reference transaction. The librarian often follows the patron's divergence because it seems to make the patron more comfortable, which is a significant intention underlying the guidelines. However, as has been revealed in part by this research, it seems that most librarians engaged in chat interactions seem to adhere to the RUSA's guidelines.

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Appendix A: Guidelines for Behavioral Performance of Reference and Information Service Providers

1.0   Approachability
In order to have a successful reference transaction, patrons must be able to identify that a reference librarian is available to provide assistance and also must feel comfortable in going to that person for help. In remote environments, this also means placing contact information for chat, email, telephone, and other services in prominent locations, to make them obvious and welcoming to patrons. Approachability behaviors, such as the initial verbal and non-verbal responses of the librarian, will set the tone for the entire communication process, and will influence the depth and level of interaction between the staff and the patrons. At this stage in the process, the behaviors exhibited by the staff member should serve to welcome the patrons and to place them at ease. The librarian's role in the communications process is to make the patrons feel comfortable in a situation that may be perceived as intimidating, risky, confusing, and overwhelming.
To be approachable, the librarian:

General
1.1   Establishes a "reference presence" wherever patrons look for it. This includes having Reference Services in a highly visible location and using proper signage (both in the library and on the library's Web site) to indicate the location, hours, and availability of in-person and remote help or assistance.
1.2   Is poised and ready to engage approaching patrons. The librarian is aware of the need to stop all other activities when patrons approach and focus attention on the patrons' needs.
1.3   Acknowledges others waiting for service.
1.3.1   Employs a system of question triage to identify what types of questions the patrons have when more than two patrons are waiting. Frequently asked questions, brief informational questions, directional questions, and referrals can be answered quickly, allowing more time to devote to in-depth reference questions.

In Person
1.4   Establishes initial eye contact with patrons, and acknowledges the presence of patrons through smiling and attentive and welcoming body language.
1.5   Acknowledges patrons through the use of a friendly greeting to initiate conversation, and by standing up, moving forward, or moving closer to them.
1.6   Remains visible to patrons as much as possible.
1.7   Roves through the reference area offering assistance whenever possible. Librarians should make themselves available to patrons by offering assistance at their point-of-need

rather than waiting for patrons to come to the reference desk. To rove successfully, the librarian should:

1.7.1   Be mobile. Get the patrons started on the initial steps of their search, then move on to other patrons.

1.7.2   Address the patrons before addressing their computer screen. Patrons are more likely to confide in librarians and discuss their needs if they do not perceive the librarians as "policing" the area.

1.7.3   Approach patrons and offer assistance with lines such as, "Are you finding what you need?" "Can I help you with anything?" or "How is your search going?"

1.7.4   Check back on the patron's progress after helping them start a search.

1.7.5   If the reference desk has been left unattended, check back periodically to see if there are patrons waiting for assistance there.

Remote

1.8   Should provide prominent, jargon-free links to all forms of reference services from the *home page* of the library's Web site, and throughout the site wherever research assistance may be sought out. The Web should be used to make reference services easy to find and convenient.

2.0   Interest

A successful librarian must demonstrate a high degree of interest in the reference transaction. While not every query will contain stimulating intellectual challenges, the librarian should be interested in each patron's informational need and should be committed to providing the most effective assistance. Librarians who demonstrate a high level of interest in the inquiries of their patrons will generate a higher level of satisfaction among users. To demonstrate interest, the librarian:

General

2.1   Faces the patron when speaking and listening.

2.2   2.2 Focuses attention on the patrons.

In Person

2.3   Faces patrons when speaking and listening.

2.4   Maintains or re-establishes eye contact with patrons throughout the transaction.

2.5   Signals an understanding of patrons' needs through verbal or non-verbal confirmation, such as nodding of the head or brief comments or questions.

Remote

2.6   Maintains or re-establishes "word contact" with the patron in text-based environments by sending written or prepared prompts, etc., to convey interest in the patron's question.

2.7   Acknowledges user email questions in a timely manner.

2.8   States question-answering procedures and policies clearly in an accessible place on the Web. This should indicate question scope, types of answers provided, and expected turnaround time.

3.0 Listening/Inquiring

The reference interview is the heart of the reference transaction and is crucial to the success of the process. The librarian must be effective in identifying the patron's information needs and must do so in a manner that keeps patrons at ease. Strong listening and questioning skills are necessary for a positive interaction. As a good communicator, the librarian:

General
3.1   Communicates in a receptive, cordial, and encouraging manner.
3.2   Uses a tone of voice and/or written language appropriate to the nature of the transaction.
3.3   Allows the patrons to state fully their information need in their own words before responding.
3.4   Identifies the goals or objectives of the user's research, when appropriate.
3.5   Rephrases the question or request and asks for confirmation to ensure that it is understood.
3.6   Seeks to clarify confusing terminology and avoids excessive jargon.
3.7   Uses open-ended questioning techniques to encourage patrons to expand on the request or present additional information. Some examples of such questions include:
Please tell me more about your topic.
What additional information can you give me?
How much information do you need?
3.8   Uses closed and/or clarifying questions to refine the search query. Some examples of clarifying questions are:
What have you already found?
What type of information do you need (books, articles, etc.)?
Do you need current or historical information?
3.9   Maintains objectivity and does not interject value judgments about subject matter or the nature of the question into the transaction.

Remote
3.10   Uses reference interviews or Web forms to gather as much information as possible without compromising user privacy.

4.0 Searching

The search process is the portion of the transaction in which behavior and accuracy intersect. Without an effective search, not only is the desired information unlikely to be found, but patrons may become discouraged as well. Yet many of the aspects of searching that lead to accurate results are still dependent on the behavior of the librarian. As an effective searcher, the librarian:

General
4.1   Finds out what patrons have already tried, and encourages patrons to contribute ideas.
4.2   Constructs a competent and complete search strategy. This involves:

Selecting search terms that are most related to the information desired.
Verifying spelling and other possible factual errors in the original query.
Identifying sources appropriate to the patron's need that have the highest probability of containing information relevant to the patron's query.
4.3   Explains the search strategy and sequence to the patrons, as well as the sources to be used.
4.4   Attempts to conduct the search within the patrons' allotted time frame.
4.5   Explains how to use sources when appropriate.
4.6   Works with the patrons to narrow or broaden the topic when too little or too much information is identified.
4.7   Asks the patrons if additional information is needed after an initial result is found.
4.8   Recognizes when to refer patrons to a more appropriate guide, database, library, librarian, or other resource.
4.9   Offers pointers, detailed search paths (including complete URLs), and names of resources used to find the answer, so that patrons can learn to answer similar questions on their own.

In Person
4.10   Accompanies the patrons in the search (at least in the initial stages of the search process).

Remote
4.11   Uses appropriate technology (such as co-browsing, scanning, faxing, etc.) to help guide patrons through library resources, when possible.

5.0 Follow-up
The reference transaction does not end when the librarian leaves the patrons. The librarian is responsible for determining if the patrons are satisfied with the results of the search, and is also responsible for referring the patrons to other sources, even when those sources are not available in the local library. For successful follow-up, the librarian:

General
5.1   Asks patrons if their questions have been completely answered.
5.2   Encourages the patrons to return if they have further questions by making a statement such as "If you don't find what you are looking for, please come back and we'll try something else."
5.3   Roving (see 1.7) is an excellent technique for follow-up.
5.4   Consults other librarians or experts in the field when additional subject expertise is needed.
5.5   Makes patrons aware of other appropriate reference services (email, etc.).
5.6   Makes arrangements, when appropriate, with the patrons to research a question even after the reference transaction has been completed.
5.7   Refers the patrons to other sources or institutions when the query cannot be answered to the satisfaction of the patron.

5.8   Facilitates the process of referring patrons to another library or information agency through activities such as calling ahead, providing direction and instructions, and providing the library and the patrons with as much information as possible about the amount of information required, and sources already consulted.
5.9   Takes care not to end the reference interview prematurely.

Remote
5.9   Suggests that the patrons visit or call the library when appropriate