FRICTION IN COMPUTER-MEDIATED COMMUNICATION: AN UNOBTRUSIVE ANALYSIS OF FACE

THREATS BETWEEN LIBRARIANS AND USERS IN THE VIRTUAL REFERENCE CONTEXT.

By

JOCELYN A. DeANGELIS

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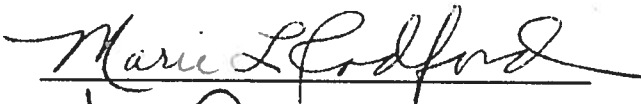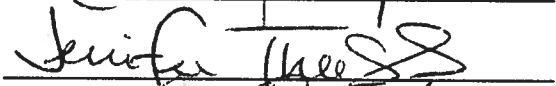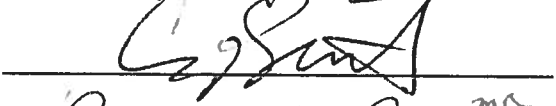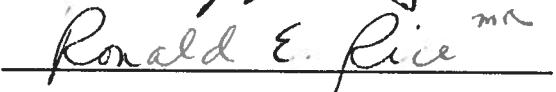in partial fulfillment of the requirements

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ABSTRACT OF THE DISSERTATION

Friction in computer-mediated communication: an unobtrusive analysis of face threats between librarians and users in the virtual reference context.

By JOCELYN ALINE DeANGELIS

Dissertation Director:

Marie L. Radford

This dissertation studies computer-mediated communication (CMC), in which interpersonal communication content between library users and reference librarians who engaged in service encounters is evaluated. The computer-mediated form of reference services, called virtual reference (VR), was the context for this research. In the CMC research, the analysis of naturally occurring interactions, analysis of face-work, face threat and friction, and impacts of identity on and in face threatening situations are not well represented. This study applied face-work (Goffman, 1967), Politeness Theory (Brown & Levinson, 1978; 1987) and social identity model of deindividuation effects (SIDE) (Lea & Spears, 1992) to virtual interactions to analyze transcripts that contained friction. The term friction was used to frame interactions that contain real or inferred

elements of discord, incivility, impoliteness, or other factors that may detract from a positive working relationship between VR users and VR librarians.

Findings indicate that in transcripts that contained friction, users and librarians did not exhibit concern for either party's negative or positive face wants. Friction between participants included reprimands, abrupt endings without closing rituals by librarians and users, as well as refusals to attend to face threats issued. When librarians issued refusals to users' initial requests, the frequency of users enacting a second face threat dropped dramatically. Findings also indicate that librarians were more likely to instigate friction in the service encounters than users. Moreover, when instances of friction were present, one instance of friction was likely to spark additional instances of friction.

CMC service encounters, such as VR, in the public and private sectors are proliferating. At one point in time, customer service interactions were a face-to-face modality, then they moved to telephone interactions, but increasingly organizations are providing customer service via CMC, such as online banking and shopping. This dissertation research is significant to any organizations or individuals that utilize CMC as a means of customer interface, such as VR, or any other mediated transaction that bridges communication between organizations and the individuals that are served.

ACKNOWLEDGEMENTS

I once heard that a dissertation is like a baby, because it needs constant care and attention as it develops, and, like a baby, needs continuous nutrition to grow properly. Although I serve as the "mother" to this dissertation, it could not have grown without the guidance from its extended family, my dissertation advisor and committee. First, I would like to thank my advisor, Marie L. Radford, for her guidance and patience in the process of my dissertation "growing up," and her appropriate prodding, fantastic insight, and occasional "tough love." Next, I would like to thank my dissertation committee, Craig Scott, Jennifer Theiss, and Ronald E. Rice, who have all contributed lots of fortifying thoughts so that this dissertation could develop and mature appropriately.

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My dissertation is dedicated to my father, Linwood S. Williams, Jr., who passed before the completion of my Ph.D. Before he died, he made me promise him that I would finish my dissertation no matter what. In my family, I am the first to receive a B.A., M.C.I.S., and a Ph.D., an accomplishment of which he was very proud. To keep my father, and my promise to him, in the forefront of my thought, I wore tortoise earrings (inspired by one of Aesop's fables), from the day of my father's death until the passing of my dissertation defense. After my defense, each of my daughters removed one of the turtle earrings and placed in new earrings, lady bugs. Then I put matching lady bug earrings in their ears, too. In this way, we were all able to embrace this process and share in the success of the completion of my dissertation, as well as fondly remember my father, their grandfather, on that special day.

Lastly, but certainly not least, I would like to thank my daughters, Samantha and Danielle, who inspired me to see my Ph.D. through to completion. My daughters, being presently nine and seven years of age, likely cannot remember a time when I was not working on my dissertation. With its completion, we will all get to appreciate a more "normal" life together, since this needy "baby," my dissertation, is now all grown up. I am so thankful for my daughters' encouragement and also their impatience with my process of writing this dissertation, which certainly served to motivate me to "just hurry up and finish it already!"

Well, I did it ☺

DEDICATION

This dissertation is dedicated to my two lovely, smart, funny, girls, Sam and Dani, and

also in loving memory to my father, Linwood S. Williams, Jr.

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CHAPTER ONE

Introduction

The Internet is a relatively new medium used to carry out interpersonal communication, organizational communication, and many different forms of personal and professional interactions. In 1995, only 14% of Americans were online daily, which sharply contrasts the findings from 2009, with 77% of American adults were online daily (Pew Internet & American Life Project, 2009). Of those who use the web 80% are White, and 93% of those between the ages of 18 and 29 use the Internet daily. Additionally, 37% of those between 18-24 years of age use Twitter.com, which is up from 19% in December 2008. The Internet supports established vehicles of communication, such as e-mail and Instant Messaging (IM), and also permits the rapid development of other communication mechanisms, such as virtual service encounters.

The following research studies CMC in the context of virtual reference (VR) interactions and explores interpersonal communication found in this form of synchronous service encounters. VR is a type of CMC that gives library users access to reference librarians over the Internet. Hiltz and Turoff (1985) define computer-mediated communication systems (CMCSs) as systems that use "computers and telecommunications networks to compose, store, deliver, and process communication" (p. 680). These systems include e-mail, computerized conferencing, bulletin-board systems and chat rooms, IM, and short message service (SMS), among other forms of electronic communication. CMC includes chat communication, which takes place in a variety of settings, which can be associated with varied goals and purposes. Chat has become a prevalent form of utility communication, which can be found in use in libraries, as well

as other commercial-oriented organizations. The medium of chat is growing globally, and chat reference, VR, is a standard service in many public and academic libraries around the world.

The type of chat that is explored in the following research needs to be distinguished from other forms of chat that take place over the Internet. For example, when individuals enter chat rooms and interface with other individuals in such a forum, this is referred to as "chatting." Chatting and idle chat, or chat for the sake of creating or maintaining relationships, and online dating, is not the focus of the current research. Rather, the focus here is on VR chat interaction, which is a type of goal-directed communication that is initiated by a user who utilizes the VR service to answer a query. The following terms can be used interchangeably: chat reference, VR, or virtual reference service. Chat reference, as the particular form of CMC that is the focus of this dissertation, has several characteristics that distinguish this medium of communication from others. For example, chat reference includes time constraints, since VR librarians seek to process queries quickly and cannot stay in one user interaction very long. When librarians perform chat reference, often they are dealing with more than one user at a time, a queue of additional users, and simultaneously face-to-face (FtF) reference service in a physical (brick) library. Also, chat interaction happens in real-time, rather than in an exchange of asynchronous electronic messages over time, such as e-mail communication that may take place as separate, discrete messages back and forth in due course. In many instances VR interactions are one-time, isolated interactions between two people who do not know one another, which is a similar characteristic of chat service interactions in other businesses or industries. Additionally, the users in the chat interaction may choose

to remain completely anonymous, or may choose to provide an e-mail address, or other personally identifying features, such as the disclosure of a name; whereas the librarians are almost always identifiable by means of a salutation that may include their names, or initials, and the name and location of library to which they are affiliated. In some instances, VR librarians obscure their names by using pseudonyms, but the library name and location remains available information to the user.

While there are similarities between FtF interaction and CMC interaction, there are some crucial differences, which will be addressed in greater detail in the literature review below. Here are a few of the critical differences, however. Every VR interaction generates complete transcripts (see Appendix A for a sample transcript), which provides an information-rich source of data and are enduring records of service encounters. Analysis of the contents of this form of CMC can highlight face-work (Goffman, 1967) in every turn of the question and answer sessions between librarians and the VRS users, and illustrate communication that may lead to impolite interactions. The chat transcripts provide a record of each interaction with its unfolding interpersonal communication complexities and some transcripts contain time-stamps that allow for additional analysis. In contrast, FtF reference encounters do not yield such tangible sources of data.

The content of the chat reference form of CMC may contain many similar elements to other forms of CMC chat in other contexts, in that interpersonal communication takes place, identities are negotiated, and interactants are free to communicate in highly individualized ways. However, VR poses some constrictions of the types of interactions that take place. For example, since VR is a service staffed by reference librarians, the VR librarians are bound by their profession, which entails

interacting with users in a professional capacity, and perhaps this limits their ability to present a more individualized or personal identity . Further, since chat transcripts are saved and it is possible that they will be reviewed by other librarians or library administrators, such a possibility may impact the type of communication the VR librarian engages in during a chat interaction. Since these chat interactions are open to review, or in some cases assessment, such practices may affect the identity that is salient for a librarian when he or she is interacting with a user, and this is referred to as salient situational identities (Lea & Spears 1992; Spears & Lea, 1992).

Like FtF interactions, VR interactions are not flat or static interactions; rather they are dynamic. The chat transcripts depict complex interactions and the analysis of them shows a high degree of socioemotional content. Socioemotional content is defined as "interactions that show solidarity, tension relief, agreement, antagonism, tension, and disagreement" (Rice & Love, 1987, p. 93). Both positive and negative socioemotional content is found in VR transcripts. The analysis for this study of virtual interactions in the context of VRS transcripts is anchored in the concept of face-work, developed by Goffman (1967), who claims that interactants in any form of communication actively and collaboratively construct a "face," which is a representation of self. This negotiation of self is a dynamic and creative process, which takes place in real-time in the process of interaction between participants. According to Goffman, during every interaction, individuals assert a "line," which is a verbal and/or nonverbal act that defines the individuals in the interaction, and extends non-visible elements of identity into textually available communication. In interaction, each person seeks to maintain his own and the other's face. In both FtF and mediated communication each person's goal and obligation

is to uphold the other's face as well as his/her own face during the process of interaction. This is not always a successful process, which leads to the study of elements negatively impact the interactions.

This study seeks to identify transcripts that contain instances of friction, where librarians and users struggle in their working relationship to resolve a query. In these VR instances, the achievement of the desired goal in an encounter meets with an obstacle. Whenever problems in the process of communication arise, this is a form of conflict. Conflict is defined as "the interaction of interdependent people who perceive opposition of goals, aims, and values, and who see the other party as potentially interfering with the realization of these goals" (Putnam & Poole, 1987, p. 552). Conflict is a broad term that has bearing on the proposed research. To anchor conflict in this study, here it pertains to instances of friction, which includes reprimands, insults, and other types of communication and actions that affect the course of interaction between librarians and users. Other factors also contribute to the analysis of CMC service encounters.

In the process of negotiated mediated communication messages, primary issues regarding the presentation of self, identity management, and how the communication process may be impacted by degrees of anonymity are important to analyze. In every interaction, how the interactants manage interpersonal communication with politeness or incivility impacts the unfolding relationship, and potentially, the successful outcome of the VR interactions. Every VR interaction starts with a users' request, and these requests can be met with many different types of librarian responses, some of which may produce friction. To analyze and better understand this dynamic form of CMC, Politeness Theory was used to assess requests and refusals in the process of VR service encounters, the

social identity model of deindividuation effect (SIDE) was used to understand issues of identity and anonymity, and face-work was used to analyze the communication strategies engaged in by the interactants. Other issues are also relevant to the analysis of CMC service interactions, and will be addressed in the following literature review. The literature review assesses appropriate current research in CMC to sharpen the argument and purpose of this dissertation.

Statement of Problem

The interpersonal communication dimensions of these virtual interactions and the assessment of positive and negative face-work have yet to be completely explored. Many VR interactions occur without discourteous behavior, but more than 63% of the sample VR transcripts contain negative content, face threats and/or incivility on the part of VR librarians, users, or both.

Without a basic understanding of the antecedents and consequences of friction and how friction is addressed during interaction, it is difficult to know how participants may anticipate problems, cope with friction, and work to diffuse disagreements. Another critical area to examine is the impact of situated identity on the part of VR librarians and how the users of VRS include anonymous or completely identifiable information, and what impacts this may have on interactions that contain friction. The lack of familiarity and the anonymous nature of the user may play a critical role in the query negotiation process and the types of interpersonal messages that are put forth in interaction.

This dissertation addresses the need for understanding the scope and nature of friction causing communication in chat interactions, and compares face threats, refusals, and responses to refusals of actual face threats and friction exhibited during the course of

naturally occurring interaction. This research can be used to elucidate the patterns of communication that could lead to negative impacts of working relationship development in this form of CMC. The analysis will evaluate the instigators of friction and assess associations between users' and librarians' identities in the production of friction.

Through transcript review, and line-by-line analysis, the turns in chat will be explored to learn the triggers for friction and explore the outcome of the interaction. The terminology, theory, and method are discussed in detail below. The aim of this research is to better understand types face threats and responses to them, instances of face-work during encounters, how impolite interactions are exhibited, and whether or not a sequence within the interaction yields information about how and why such negative encounters unfold. The interpersonal negotiation that takes place and the outcomes of VR interactions that contain instances of friction will likely be generalizable to the wider context of negative CMC interactions, especially in the area of electronic service encounters. As a microcosm of CMC, the VR context provides a focused window of analysis in the broader context of CMC. This study includes the goals of informing practice and providing insights for improving service interactions for participants, for both service providers and users, and informing the literature of the nature of friction causing interaction that acts to erode positive relationship development in chat.

This research builds on the literature by adding insight into interpersonal communication in CMC, and, through turn-by-turn analysis, yields an increased understanding of chat interactions that contain friction. This study informs scholarly research as to the presence or absence of face-work in CMC and the types of real or perceived face threats that occur in chat. Additionally, the research informs the

understanding of the communication process that librarians utilize while working with virtual users and findings are applicable to other chat interactions that contain friction in the wider service sector and inform professional practice. VR is only one aspect of CMC that is growing to address the changing needs of users. "Virtual reference services strike at the heart of what the profession needs to address if librarians are to be effective in meeting the users where they are" (Kresh, 2002/2003, p.28).

The analysis of naturally occurring synchronous CMC interactions, the context and nature of face threatening and/or uncivil discourse, studied through the framework of face-work, Politeness Theory, and the SIDE model, as a novel approach. This approach adds to the field of communication research and seeks to identify findings to inform VR services, and also to contribute to CMC interaction research and the chat-based customer services industry.

CHAPTER TWO

Literature Review

The literature review touches on several areas of study that are particularly salient given the scope and content of this dissertation. The literature review is organized around two major areas of research. The first part of the review discusses relevant CMC literature that aligns with components of VR interaction. The second section of the literature review discusses VR research specifically, with a focus on interpersonal communication research. These sections are each summarized to highlight particular areas that this dissertation research addresses. In Chapter Three, the scholarly literature that addresses the theories utilized in this dissertation is reviewed as part of the theoretical framework of this study.

The first section of the literature review focuses on the important history of CMC research and also reviews studies that compare CMC to FtF interaction, rules of CMC interaction, impression development and self-presentation, and literature on conflict in CMC, as well as scholarly research in the area of electronic service encounters.

CMC Research

The study of interaction via computers translates into understanding how individuals interact across technological and interpersonal boundaries. The implications of the studies of Internet use and human relationships are immense (Cummings, Butler & Kraut, 2002; Montero & Stokols, 2003). The patterns and content of interaction identified in one forum reach beyond to greater patterns of interaction across environments: "people

don't just relate to each other online, they incorporate their computer-mediated communication into their full range of interaction: in-person, phone, fax, and even writing" (Wellman, 2004, p. 123). CMC via the Internet is just another way in which people reveal an understanding of who they are in reference to another, and it is not the technology that is at the heart of this interaction; rather, it is the choices of interpersonal communication displayed in the context of CMC. "It is clear that the Internet not only represents a setting for technological innovation, but it also provides a space for social transformation and self awareness" (Montero & Stokols, 2003, p. 64). CMC is an increasingly pervasive form of interpersonal communication, which can be used as a vehicle to initiate or sustain relationships (Burgstahler & Cronheim, 2001), and due to its ubiquitous properties and users' proclivity for this medium, it is also a fertile mode of communication study. CMC offers many new avenues to pursue in the endeavor to understand interpersonal communication and is an important area in which to study interactivity (Stromer-Galley, 2004).

The use of CMC as a form of communication is proliferating, as technology, such as smart phones, enables additional communication functions with new ways and more channels being utilized to form or maintain relationships. "While several years ago cell phones were mainly used for calling purposes, smart phones, communicators and electronic organizers are now replacing the classical cell phone, providing a much broader set of functionalities" (Ziefle, Schroeder, Strank, & Michel, 2007, p. 307). Mobile technology represents one prominent growing market for CMC since many phone plans include SMS and Internet access. CMC is increasingly accessible via the Web from phones, and also from computers at work, school, public libraries, or home, albeit, not

accessible to all due to economic, geographic or other restrictions. The "most widespread form of mediated communication is still some form of text-based computer-mediated communication" (Newlands, Anderson & Mullin, 2003, p. 325). Once CMC access is attained and utilized, it may function to enable individuals to communicate with others whom they may not otherwise had the opportunity to interact. CMC is a tool that crosses geographic and time differences, and in the case of VR, users and librarians can interact internationally, night and day. As Barker et al. (2000) have noted, "time and distance constraints for many individuals forming groups make CMC a necessity and therefore commonplace" (p. 493), so CMC functions to maintain existing relationships (Valkenburg & Peter, 2009).

Over the last 30 years, CMC has been the focus of many scholarly publications, and the study of interpersonal dynamics in CMC is not a new area of study, nor is research on how users overcome the lack of nonverbal cues available to them in this form of communication. Hiltz and Turoff (1978) found that users who were able to gain experience with CMC found ways to express nonverbal cues textually. It is important to underscore the rich history of research and theory for CMC. In 1984, new media was defined as "those communication technologies, typically involving computer capabilities (microprocessor or mainframe), that allow or facilitate interactivity among users or between users and information" (Rice, 1984, p. 35). This definition is still relevant to CMC in 2010. More than twenty years ago, CMC was found to expand communication and interaction and broaden access to individuals across geographic boundaries. Additionally, this form of communication also functioned to "loosen the constraints of conventional media, yet allow the use of combinations of attributes of each of those

media" (Rice & Williams, 1984, p. 56). CMC offers increased functionality as a medium to carry information and also extend opportunities for interpersonal interaction, albeit constrained to textual and image communication, and without inclusion of nonverbal communication.

In the 1980s, new media was not thought to exist as a completely separate and disparate form of communication with its own set of characteristics, but rather as a way of bringing together interpersonal communication with mass mediated communication to form a "continuum of communication behaviors" (Rice & Williams, 1984, p. 56). Scholars from more than twenty years ago found that the boundaries between FtF and mediated communication were fading, and personal communication needs were found to be met by the new media (Rice & Williams, 1984). Indeed, CMC quickly became a forum to share information and extend relationships beyond those available in close geographic locations. With the emergence of CMC, this medium also began demonstrating preferences for communicating particular types of information. For example, an early e-mail study by Sproull and Kiesler (1986) found that social context cues, such as geography, organizational status of individuals, and the relationship between e-mail correspondents, e-mail topic, and norms of communication, played a significant role in the type, and consequently the impacts of, communication via this medium. Interestingly, e-mail messages from supervisors and subordinates were very similar, and e-mails were found to contain 60% new information.

CMC research on content and relational dimensions is also prevalent. Due to communication possibilities that CMC affords, such as a low-cost and easy access to the Internet, individuals are able to create and maintain personal and professional networks.

At times this form of communication may take place where previously no communication existed (Rice & Love, 1987). Rice and Love sought to identify content and connectivity patterns in CMC systems, and found that socioemotional communication was supported by these systems. Indeed, even when interactants did not know each other, CMC can support considerable socioemotional content. These findings align with the interpersonal communication at the focal point of this dissertation research, in that library users and VR librarians are not likely to know each other, yet share relational messages via chat reference. Rice and Love offer an interpretation of the CMC interactions of their study, which indicates that "CMC systems can support socioemotional communication and the communication reflects the inherent communication traits of the users" (p. 102). However, the degree to which users are familiar with each other, and how the medium is viewed as a task-oriented process, may shift the interpretation and use of CMC as a mode for socioemotional communication. This research has bearing on the current study, because users may select chat reference as a cost-effective means for communication with a library professional, and VR does enable communication across geographically dispersed individuals.

Other scholars have also significantly contributed to the rich CMC research history. Similar to Rice and Love, Hiltz and Turoff (1993) also found that CMC was a cost-effective means of communication, and also concluded that little knowledge of computers or computing was necessary in order to successfully communicate via computers. Hiltz and Turoff also found that CMC resulted from technological, sociological, and economic factors over several decades. In particular, one salient development was the "increasing economic and social importance of information" (p.

11). Hiltz and Turoff (1993) stated that the increase and proliferation of computer technology has impacted the communications industry, and CMC has become intertwined with communication lines. Regarding the increased need for information access, the emerging computing systems offered increased connectivity over traditional phone lines. While Hiltz and Turoff (1978) offered these insights more than four decades ago it is clear that connectivity and the ability to request and receive information in a cost-effective manner is still vitally important to VR users today.

Given the extensive history of CMC research, including a substantial focus on relationship development and socioemotional content, often CMC has been contrasted with FtF communication. CMC may be preferred to FtF encounters due to a number of factors, including "greater control over message creation and relational content" (Wright, 2004, p. 242). This is an important area to review, since elements of CMC interaction may mirror FtF interaction. As technology continues to expand into the ways people work and how tasks are accomplished, its impact on relationships formed via this medium will increasingly offer additional findings that impact the formation and maintenance of relationships. Although mediated, the interactions via CMC are often complex forms of social interaction that carry with them interpersonal communication messages.

The following section of the CMC literature review is constructed from relevant research that reflects on key elements that intersect with the focus of this dissertation research. This section moves from more general CMC research to highly focused research on issues of conflict in CMC. The first section examines similarities between CMC and FtF interaction. This underscores the significance of research in VR since it has

bearing on electronic communication and also FtF interaction for many types of service encounters from the perspectives of users and also providers. A subsequent set of relevant literature addresses rules of CMC interaction and the impacts on communication when rules are breached. Additionally, literature on how impressions are developed in CMC and how the presentation of self is negotiated in every typed turn of communication is explored. Lastly, current literature on conflict in CMC sheds light onto the types of conflict that exist in purely electronic communication. The CMC literature review highlights findings that impact this dissertation and provides a foundation on which the dissertation research on the topic of service encounters is constructed.

Comparing CMC and FtF Communication

A substantial amount of CMC research has centered on comparing CMC interactions with FtF communication (see Becker-Beck, Wintermantel & Borg, 2005; Erickson & Kellogg, 2000; Flaherty & Pearce, 1998;Garcia & Jacobs, 1999; Hancock & Dunham, 2001; Hiltz, Johnson, Turoff, 1986; Kim, Kim, Park, & Rice, 2007; Mesch & Talmud, 2006; Peter & Valkenburg, 2006; Smith, 2003; Walther, 1992, 1993; Walther & Burgoon, 1992; Weisband & Atwater, 1999). CMC in comparison to FtF communication has bearing on the VR interface, since VR is an electronic form of FtF reference. Additionally, CMC affords many of the same benefits of FtF communication, especially in regards to goal-oriented communication, such as chat reference. When a user logs onto a VR site to gain access to a reference librarian and get information, many of the answers and resources that are available for FtF reference are also available electronically. Also, working relationships can develop in CMC that mirror those in FtF interactions. Arnold (2002) concludes that there are many similarities between FtF and CMC interaction: "just

as face-to-face relations may be instrumental, so mediated relations may be interpersonal" (p. 231). Others find critical differences between CMC and FtF communication: "CMC may serve as a tool to encourage, permit, and assist in the development of interpersonal relationships; however, relationships based solely on CMC will be significantly different from a relationship developed based on FtF" (McQuillen, 2003, p. 622). CMC has been compared to FtF interaction to assess which forms of communication contribute to better relationships, more effective communication, and user preferences.

Wright (2004) surveyed 178 undergraduate students to learn about preferences for relational communication, including maintenance strategies in CMC. Wright found openness and positivity are important to those who use the Internet for communication and who had relationships that were either exclusively or primarily Internet based. However, those who had some form of FtF interaction, yet maintained a primarily Internet-based relationship, had higher relational communication scores. This finding underscores the value of FtF interaction as a substantial influence on relationships. Wright (2004) also notes that it is "likely that people who wish to maintain an on-line relationship would attempt to make the interaction pleasant or convey positive affiliation other ways" (p. 249).

How Internet communication differs from FtF communication was studied by Peter and Valkenburg (2006), who assessed survey results from 687 adolescents. Internet communication here is defined as "private, largely text-based interpersonal communication in dyadic or small-group" form that utilizes e-mail, chat, or IM. These are in a similar format to VR interaction that is the focus of the current study. They found

that only 26% of teens thought the Internet had less or the same degrees of reciprocity,

which includes being able to "listen" better to others and vice versa. This indicates that

CMC shares a degree of interactivity with FtF communication, but the lower percentage

may indicate that CMC is not the preferred medium for interpersonal communication.

Similarly, Flaherty et al. (1998) found that individuals preferred FtF communication over

CMC when they wanted social interaction with others, as well as for other interpersonal

goals, including getting information. Also, Weisband and Atwater (1999) found that

participants experienced working with one another as more positive in FtF than in CMC.

CMC may be rated more highly by individuals who prefer this type of interaction for its

convenience, cost-effectiveness, and its ability to break down geographic boundaries,

which are characteristics that could impact the adoption and use of VR.

 A critical difference between FtF and CMC is that CMC lacks visual and audio

cues; however, users find ways to compensate and make personal connections. While

CMC is a widespread form of communication that may lack the traditional nonverbal

cues of FtF interaction, there are many ways to compensate, "users have found ways to

increase the richness of CMC and achieve socially oriented communication through it"

(Walther & D'Addario, 2001, p. 325). Emoticons and other re-representations of

nonverbal communication are additional elements interactants can choose to use in text-

based communication (Dickey, McLure, Chudoba, & Bennett, 2006; Walther &

D'Addario, 2001) as they enable the interactants to communicate more than just words on

a screen – they may affect message interpretation. Re-representations are ways to

incorporate emotional content as a way of giving more information than available in plain

text. Examples of this are found in using ellipses to indicate more information is to come,

or using asterisks to bracket words to add emphasis, or using an asterisk when a user is self-correcting erroneous typing, as well as using uppercase letters to denote yelling (flaming) at another. Textual rerepresentations may fluctuate with the user's technical proficiency, and while this can impact what the users incorporate into text, this may not impact message interpretation. Walther and D'Addario's (2001) research sought to find an increase in affect with the increased use of emoticons, but found fewer impacts on message interpretation than hypothesized, and found that, in general, e-mails with emoticons did not impact message interpretation differently than e-mails without them. In essence, email messages with or without re-representations can be understood equally well, or equally poorly.

CMC is increasingly used to connect people and in some instances it may supplement or even replace FtF interaction. Internet communication is widely available, and is also being increasingly utilized on smart phones. Overall, ordinary cell phones can be used for text messaging, which is another expanding form of communication for many Americans, according to a CTIA report (2008). Since 1995, the use of mobile phones to send and receive text messages had increased 160% by 2008 in America, and nearly 2.5 billion messages are sent every day (CTIA, 2008). This statistic is likely to continue to increase in the future.

As a form of communication, chat interaction is expanding. Zinkhan, Kwak, Morrison, and Peters (2003) e-mailed individuals who had participated in chat sites to invite them to take a survey and garnered 307 chat respondents. The primary focus of this survey was to assess the demographics of the population of individuals who use chat. The demographics revealed that those who participated in chat were largely between the ages

of 16 and 40 years old, with more than 50% of participants being single and without

children, and 70% were male, and the country represented the greatest frequency was the

U.S., followed by Canada, and with China, Australia, Korea, and Taiwan comprising the

remaining countries of origin. Findings of this survey include that the top reason

individuals chose chat communication was because it was convenient and "less expensive

than other modes of communication" (p. 25). Other reasons were that chat provides an

outlet for entertainment, companionship, and relaxation. While it is argued that CMC

may not be a personal form of communication due to its lack of nonverbal

communication, the rise of sites, such as SAHAR, that succeed in providing very

personal communication to troubled individuals, demonstrates that CMC interaction can

be a successful form of highly personal interaction. Since the proposed research

investigates VR interaction between librarians and users, it is categorized as a service

interaction.

Information, and the need for information access, is at the heart of VR

interactions, and serves as the premise by which each VR interaction is based. VR

services are following this trend and becoming available to mobile phone users. The rise

in the implementation of VR services worldwide and the expanding area of text-based

and IM reference underscores the importance of information access to individuals. By

virtue of being mobile, users are neither anchored to a desk nor need to visit a brick

library to get information. A beneficial element of CMC is that it spans geographic

boundaries, enables the creation and maintenance of relationships, and functions in many

of the same ways as FtF communication. Findings from FtF and CMC research will

likely have bearing on one another. Another similarity between FtF and CMC interaction

is that they are both rule-governed, and the following section reviews current literature on how patterns of communication are regulated.

Rules and Communication Strategy

Similar to FtF and other forms of CMC, chat reference is rule-governed. CMC, and chat, is often found to be an orderly exchange between two individuals, in which each person takes a turn at typing and usually waits for a response before typing again. These are general rules of interaction for VR, and often these service encounters are straightforward and unproblematic, nonetheless in some instances friction is experienced. Rule following can be a function of experience or choice, and may also be impacted by other factors. In CMC, cohesion between interactants may be supported by users who share language use, such as shared vernacular structures (Paolillo, 2001).

Although a breach in the rules of conduct may result in conflict, the following of rules and chat conventions could promote a positive interchange and reduce instances of conflict. Walther and Bunz (2005) performed a study in which they imposed a set of behavioral rules to follow during a CMC experimental design, and found notable positive relationships associated with following such rules, such as social attraction and perceived quality of work (p. 843). They suggest that greater frequency of communication about the assigned task contributed to liking between individuals. Walther and Bunz (2005) identified communication rules that, when followed, increased the self-report of the subjects' liking and trust of other interactants. Of particular interest from Walther and Bunz's research is the importance of the frequency of communication, as this was associated with relationship development, especially trust (Jarvenpaa & Leidner, 1998;

Walther, 1992; Weisband & Atwater, 1999). Walther and Bunz also highlighted the need for interactants to "overtly acknowledge that you have read one another's messages" (2005, p. 834), which also positively impacts relationship development. In VR interactions, librarians and users both need to attend to the other's messages. Again, experience with this mode of communication, and the awareness of rules that accompany experience, may impact the ability to do this well.

Newlands, Anderson, and Mullin (2003) investigated how novice CMC users adapted communication strategies in order to accomplish effective communication. They defined effective communication as using fewer words in text dialogue to convey enough information to complete a task. Experience in this medium improved effective communication performance over time and fairly rapidly with "relatively little experience" (p. 341). Additionally, Paolillo's (2001) CMC group research contends that a sense of "standard" meaning in CMC promotes group cohesion. In the current study, the background of users CMC experience or proficiency is not available, yet these factors may indeed contribute to the success of VR interactions and VR conflicts. Following rules demonstrates knowledge and proficiency with CMC, which impacts the interaction. In addition to rule following, other CMC content is actively used to construct impressions, either positive or negative, and negotiate the exchange between interactants.

Impression Development and Self-Presentation in CMC
Many elements of CMC interaction function to establish and build impressions, including the personal and professional role of the VR librarian during chat reference encounters. At the onset of VR interaction, both the librarian and user engage in impression development, which may play a significant role in the unfolding working

relationships during the query negotiation. Impression development in CMC is a well-researched area, which is affiliated with this dissertation because VR interaction contains a process of identity negotiation between both librarians and users. Like VR librarians, the VR user also participates in impression formation of themselves during the process of interpersonal communication. Impressions are often formed quickly, and these impressions may be enduring for the individuals involved, and also perhaps for the VR service itself. CMC enables users to present themselves in varied ways. In VR interactions, at the start of an interaction with users, librarians may be more confined to follow interaction rules given their professional affiliation; however, users may or may not adhere to professional or even appropriate lines of communication in interaction. To a degree, it may be the case that users have many more choices available to them and how they present themselves in CMC since they are unlikely to ever have a future CMC or FtF interaction with the VR librarian, and also because they have the option of remaining completely anonymous. Users may view the interaction as unimportant, relationally, since they do not plan on interacting with the VR librarians again in the future. Issues of anonymity are important to consider and literature on this component of CMC interaction is explored in the theoretical framework chapter below.

CMC research points to how this medium affects communication content and how users generate understandings of others. The atmosphere of CMC interaction may enable users to attribute characteristics of others with whom they interact differently from what they might conclude from FtF encounters. Several elements affect CMC interaction. For example, socioemotional content refers to the degree to which individuals interact in a personal way, which can vary from interaction to interaction. Additionally, time was

found to affect the amount socioemotional content in CMC. When no time limitations were present there was more positive socioemotional content, as compared with other studies that had time limitations. Walther and Burgoon (1992) also found that given time, interactants can reach a level of relational development in CMC that is similar to FtF relational achievement. The accumulation of contact by members within virtual groups over time leads to greater liking (Walther et al., 2001; Weisband & Atwater, 1999). Other researchers also contend that over time people will adapt to CMC and become more literate and effective in this medium (Garcia & Jacobs, 1999; Newlands et al., 2003; Rice & Love, 1987). The time exposure between interactants is perhaps not a viable comparison to make with CMC in the VR context since the user and librarian are usually working in a time-restricted encounter, and they will likely not interact with each other again in a future VR interaction, or other medium.

Walther (1993), in an experimental design, found that self-reported impression development in CMC had a positive relationship with impression formation. The amount of time spent in CMC communication and impression formation did not run parallel to FtF impression formation, which was almost immediate. These results suggest that, given more time, CMC impressions may become more fully formed, and be quite similar, if not the same, as FtF interaction. Walther, Anderson and Park (1994) found that people span boundaries to achieve communicative goals. "Communicators using any medium experience the similar needs for uncertainty reduction and affinity, and to meet these needs CMC users will adapt their linguistic and textual behaviors to the solicitation and presentation of socially revealing, relational behavior" (p. 465). Hancock and Dunham (2001) also compared FtF to CMC impression formation and found that impression

development in the CMC was less complete than the FtF impressions. Although the impressions were less complete, they were reported to be more intense in the CMC forum as compared to those reported in the FtF interaction (Hancock & Dunham, 2001).

Furthermore, Walther and Tidwell (1996) indicate that relational aspects of impression management in CMC are underscored by three primary criteria. One criterion includes an idealized perception, in which, in the absence of FtF exposure, individuals form impressions of what they can observe in CMC and may overlook negative things (like misspellings), and judge the other to be very positive. A second criterion is selective self-presentation, in which only the favorable information about oneself is put forth in an interaction and negative attributes are concealed. In such an instance, the other does not have any means to validate or discredit the possession of these positive qualities. The final criterion is reduced cues, since CMC does not provide access to nonverbal communication cues. Walther (1993) also puts forth the idea that in the medium of CMC it may be the case that "users are more cognitively mindful and deliberate in their message construction, disclosing aspects of their personalities and adopting communication behaviors which are more stereotypically desirable, and creating more positive impressions" (p. 394).

Connected to the management of interpersonal relationships via CMC is another important area of study that focuses on the content of messages. Via discourse analysis, Waldvogel (2007) studied greetings and closings in workplace e-mail. The focus of this research was on the affective role of these openings and closings of e-mail messages and the interpersonal elements of relationships that are revealed by the inclusion or omission of such content. The presence of greetings and closings are viewed as representations of

the affect of friendliness, which in turn reflects the workplace culture (p. 474). Waldvogel

links content to wider contextual considerations, such as culture in this case.

Impression management and strategies have been studied by Becker and Stamp

(2005), in which 10 chat room participants were studied and a model of the participants'

impression management motivations resulted. The participants indicated three primary

motivations to manage their impressions in a CMC environment: "the desire for social

acceptance, the desire to develop and maintain relationships, and the desire to experiment

with identities" (p. 247). Although VR interactions are most likely single interactions

between VR librarians and users, these instances include a negotiation between these

individuals as a means to identify and deliver materials that are requested. In this process,

a working relationship is constituted between information provider and information

seeker. In this working relationship a rapport may develop, and impressions of one

another may be managed, as a means to achieve a positive outcome of the interaction.

With regard to these motivations, it is clear that impression management is a form of

goal-directed behavior. Kim, Kim, Park, and Rice (2007) examined relationship

configurations across a range of media, including, among others, CMC (e-mail, IM,

SMS) and FtF to compare communication relationships in Korea. They found that CMC

tended to be utilized as an expanding medium, to strengthen relationships with weak ties

(p. 1202) and for home-makers, who use CMC to communicate with those with whom

they may not be able to have FtF interaction (p. 1204).

Impression development in FtF reference and VR may be very different, since

these interactions do not afford the same level of interaction. Some of the uses and

capabilities of the CMC research reviewed here differs significantly when compared to

VR interactions, but nonetheless offer insight into the power of impression development via this mode of communication. Even with only an isolated instance of communication, impression development is an important part of the interaction between VR librarians and users since interpersonal communication is taking place and these interactants are active participants in the information need negotiation and each play a critical role in the positive or negative outcome of these exchanges.

In the process of impression development, the underlying work of assembling typed communication messages gives both VR users and librarians the opportunities to present a desired self-image at every turn of every encounter. Each time a user logs on to use a form of CMC s/he has the opportunity to make choices in self-presentational elements, and has the ability to select how to present her/himself. The user's choice of self-presentation, as demonstrated by how a query is presented, may impact how the librarian handles the query and may impact the type of interpersonal communication that takes place. Additionally, each interaction for the VR librarian also provides an opportunity to negotiate his or her self-presentation.

There are many reasons users choose to use CMC over FtF communication. Users' selection to use mediated channels of communication instead of FtF communication may be due to the recognition that mediated communication channels can help minimize loss of face for themselves or another's (O'Sullivan, 2000). When individuals communicate via CMC, there may be occasion to select which sort of "self" may be appropriate for the interaction. The "hyperpersonal perspective of CMC argues that the absence of nonverbal cues" and other qualities of CMC "prompt users to engage in selective-self presentation" (Tidwell & Walther, 2002, p. 319-320). According to

McQuillen (2003) "CMC relationships can be compared to interactions at a costume party" (p. 622), where each person can selectively present, or manipulate characteristics of a desired self-presentation. Gibbs, Ellison, and Heino (2006) found that self-presentation in online personal ads supported the hyperpersonal perspective, in which personal attributes are embellished based on textual cues. Likewise, VR interactants may actively select qualities to present in an interaction, and actively seek to hide other characteristics.

CMC is argued to have advantages over FtF interaction in its ability to employ different strategies in this mode of communication that may reduce boundaries of FtF interaction, and increase communication effectiveness. This has implications for chat reference research because CMC may afford benefits to some users that may utilize this mode of interaction with librarians due to the flexibility of self-presentation in CMC (Ramirez, Walther, Burgoon, & Sunnafrank, 2002). Self-presentation is not fixed; rather it changes according to the role one is playing in interaction, and with whom the interaction takes place. According to Markus and Nurius (1986) we have a repertoire of variations of self, and it may be that possible selves are exempt from direct social control and social negotiation, and these possible selves remain detached from these norms until, at some point, they are tested and validated by social experience. This means that we can try out different selves, and these selves remain rather fluid and flexible until an experience helps authenticate them. There is no quota for how many possible selves one can possess. There is the potential that an individual could "create an infinite number of possible selves, but in normal circumstances the repertoire of possible selves is a combination of the subject's personal experience, and the living and communication

environments he is familiar with" (Riva, 2002, p.589). Clearly, studying how and when versions of self are enacted will increase understanding of why some selves are enacted in certain CMC situations. For example, this would yield insight into why some CMC users enact a specific self online with someone whom they do not know, as is usually the case in VR interactions.

Amaral and Monteiro (2002) propose that CMC enables a new identity that co-exists with other identities in other media or FtF, which they term "technologic identity." They consider the Internet as a "communicational interactive space" in which individuals "manage their social identities" (p. 576). Those who use the Internet more than six hours a week are likely to develop an identity that is separate and "emotionally disconnected from other valued human relationship dimensions" (p. 587). In this effect, the technological identity is projected online and is singular and separate from social identity dimensions. McQuillen (2003) also contends that CMC "may serve as a tool to encourage, permit, and assist in the development of interpersonal relationships; however, a relationship based solely on CMC will be significantly different from a relationship developed based on FtF" (p. 622). An online relationship may be different than a FtF relationship, but it will still encompass the common traits of non-online relationships. Self-presentation is a matter of choice for every CMC participant. Another choice in some CMC interactions includes retaining anonymity or revealing some cues to identity, which may also powerfully impact the interaction.

Like any CMC interaction with someone new, impressions are likely formed in the first moments of a VR interaction. The way communication is initiated by the user may play a role in the interaction and play a critical role in how the VR librarian treats

the user. Conversely, how the query is addressed by the librarian affects the user's response to the librarian. Such exchanges may be impacted by issues of self-presentation, impression formation, and may result in positive or negative interactions that cause friction in the working relationship. Throughout a chat interaction, each person takes a turn in typing and many choices are available to the interactants in what they will type, how they structure their interactions syntactically, or politely, and any content they choose to display in the lines of interaction. Each of these factors contributes to the presentation of self in a given CMC interaction, and these impressions and lines construct the VR interaction. The attainment of goals as part of an outcome of VR interactions may depend on how the exchanges are textually negotiated. The study of how VR interactions are initiated by users, and how queries are represented, is integral in the study of the outcomes of such exchanges.

Another factor that may contribute significantly to the electronic working relationship is the degree to which the user conceals or reveals his/her identity to the other. Identity is part of self-presentation, but when it's withheld it may lead the other to make assumptions, and may contribute to the type of collaborative working relationship that is established in a VR encounter. Issues about the effects of anonymity in CMC interactions are core areas of analysis of this dissertation, reviewed in the theoretical framework in Chapter Three. Although some interactions may be unproblematic, other negotiations of online working relationships are not always successful, and some exchanges may lead to negative interactions due to factors that are overt, thought to be intended by the other, or due to other causes that arise during the interaction.

CMC and Conflict

Conflict in CMC can arise for many reasons. The focus here is on how meaning is inferred and what elements of the communication constitute friction in the encounter. Literature on conflict associated with CMC is relevant to the present study on face threats and incivility, especially since face threatening or uncivil communication may serve to create conflict between a user and librarian. Specifically, it is argued here that face threats are acts of conflict, which can be the result of disagreement, misunderstanding, or other elements of interpersonal communication. CMC, and especially VR, is a text based form of interaction and does not allow visual access to physical cues and nonverbal communication (Fagan & Desai, 2002/2003; Ovadia, 2002/2003; Pomerantz, 2005; Van Houten, 2004). There is no visually available nonverbal communication in CMC and, "the process of digital reference involves the challenges and problems of an interactive computer-mediated reference interview" (Spink, 2002/2003, p. 57). However, Riva (2002) argues that it is "precisely the absence of non-verbal feedback in CMC, which makes these processes even more important than in face-to-face communication" (p. 584). The relationship and interaction between a user and a librarian in person is viewed as a partnership (Mabry, 2003), but it is suggested that VR does not allow for the same relationship formation between librarians and users as FtF contact (Van Fleet & Wallace, 2003). CMC, and specifically VR, due to its lack of nonverbal cues, may magnify negative interactions and give individuals the feeling of free or open communication, which may make them feel more comfortable expressing themselves unreservedly. This sort of freedom may lead to a greater proportion of negative talk and potentially conflict. In another example, Zornoza, Ripoll, and Peiro (2002) found that groups participating in

idea generation and in intellectual tasks had higher incidence of conflict in CMC than in FtF interaction.

Similar to other forms of communication, the content of CMC communication cannot be considered separate from its context. CMC participants are "social actors with their own aims and autonomy in situations" (Riva, 2002, p. 588). Riva defines social context as the "symbolic system of a given culture, which is continually being altered by practical human intervention" (p. 589). Context is a function of what interactants bring to the communication, its content and meaning. In this way "context may be co-constructed by social actors, but they use communication to exchange meanings, not pieces of information" (p. 589). Communication is a product of interpretation of the relationship and interaction (Riva, 2002). Within the context of communication via CMC relationships develop, and, in the case of VR, working relationships usually only exist for the length of interaction. This may play a significant role in the patterns and content of communication, and whether or not an individual chooses to express disagreement, incivility, or other forms of conflict.

There are several primary ways in which users create conflict, and one way is through negative paralanguage. For example, Riva (2002) notes that a "typical breach of netiquette involves the use of flames" (p. 583). Typically, flaming in CMC is thought to be synonymous with raising one's voice in FtF interaction. Some find that the medium itself predisposes it to conflict due to misinterpretations. "Textual communication requires a different set of competencies than face-to-face interaction, and misunderstandings of messages are often more common in CMC" (Wright, 2004, p. 243). Walther (1993a) found that in CMC, offensive conduct is overrated, or exaggerated. In

fact, different forms of CMC are associated with a difference in the intensity of language, profanity, and anti-social communication. External characteristics of VR may explain some conflict, such as geographic differences, which were found to be a disruptive effect that leads to high levels of conflict (Cramton, 2001; Hinds & Bailey, 2003).

Research on conflict draws on comparisons between FtF and CMC interactants. It is clear that CMC possesses some central differences from FtF communication, but do these differences lead to more or less interpersonal conflict? Conflict can arise in CMC when rules are broken, differences between users affect content, or interactants lack CMC proficiency. Individuals may choose to use electronic communication for various reasons; one reason is to avoid FtF interactions when the communication carries bad news. Markus (1994), in a case study of e-mail usage, found that employees of a large company preferred to use e-mail communication for situations that included negative emotions. While technology itself is blamed for contributing to negative interactions, this study found that when a negative action took place via CMC, the employees attributed negative effects to the individuals involved and not the technology. In some cases, CMC interactions are found to contain a greater degree of conflict. Research demonstrates that some conflict in CMC may spike initially, but then decrease over time. For example, Hobman, Bordia, Irmer and Chang (2002) found initially greater process conflict in CMC than in FtF interaction, but also that over time these types of conflict decreased. In fact, for CMC groups, "relationship conflict was significantly positively correlated with process conflict" (p. 459). In another study comparing the rate of conflict between FtF and CMC, interactants had contrary findings that indicated more conflict in FtF communication. Becker-Beck et al. (2007), in a study comparing regulative interaction in

FtF groups compared to CMC groups, found sequences of conflict were "significantly

more prevalent in FtF" (p. 523) when compared to CMC interaction. Additionally, other

research presents a different perspective on CMC interaction. For example, the SIDE

model (Postmes, Spears & Lea, 1999) suggests that generally conflict would not be any

more present in a CMC environment than a FtF situation if social identity were equally

salient. In another study, which utilized transcripts from an experimental design in which

managers were instructed to interact via CMC about a conflict situation with a

subordinate, trained observers assigned conflict codes where appropriate in each turn of

conversation. This study found that conflict increased when the attempt to avoid it was

demonstrated, and that conflict decreased when interactants sought to satisfy their needs

at the cost of others (Dorado, Medina, Munduate, Cisneros, & Euwema, 2002). The data

also suggests that CMC managers become less active as they seek to avoid forcing issues,

compared with FtF managers who became active in different ways when managing

conflict.

These studies yield important insights into the context of conflict and

communication strategies that either increased or decreased conflict in interaction and

they highlight the need and importance of evaluating CMC behavior within the context in

which it takes place. The next section of the literature review also focuses on context and

service encounters.

CMC as Service Encounters

Research about CMC interaction in the area of customer relations and service

encounters is a new area of study and is not well represented in the scholarly literature.

Research on service encounters in naturally occurring communication is another area that

needs greater representation in the literature. Shavelsky (2006) found that employees engaged in emotional labor in the process of providing mediated services via email communication. An additional finding was that singular or unrepeated contacts, with customers were found to demand more emotive effort and more emotional labor. The work of engaging in electronic service encounters may provide greater convenience, but interpersonal process may produce more work for the interactant. This is an important area to study in greater detail since the use of CMC by companies and industries as a method of communicating with consumers has grown exponentially. CMC interaction as a means of opening lines of communication between service providers and those they serve is found in the medical profession (Barak, 2007; Cavanagh et al., 2009; Proudfoot, 2004; Young, 2005), as well as in banking and internet sales, as previously mentioned.

Some researchers argue that the growth of technological change may lead to consumers of healthcare to have alternatives to the office visit, and may access healthcare services for diagnosis, treatment, or even therapy, electronically. The offering of online patient services saves the patients and doctors time and money; however, the efficacy of treatments is still under review, although computer-based therapy for depression and anxiety is meeting with some success (Proudfoot, 2004). Services that have been implemented to help people via CMC include online counseling (Young, 2005) and a suicide help cite SAHAR (Barak, 2007), which offer people an anonymous and confidential online environment to seek help from anonymous skilled providers. One of the benefits of this service is that individuals receive personal communication via synchronous or asynchronous channels. The SAHAR cite gets 1000 contacts a month, with approximately 350 of them from clearly suicidal individuals. Young (2005) cites

that there is scant empirical research about the online efficacy and preference of service recipients regarding the use of CMC interaction in the process of treatment. In Young's research, the clients' perceptions of the benefits and/or disadvantages of online counseling were collected from 48 e-clients. Results indicate that college educated, male Caucasians found the most benefit from such a service, including convenience, anonymity, and getting treatment from qualified providers. The concerns about participation in online counseling were fear of being caught, or discovered by others, during an interaction, and also the perceived lack of privacy and security during chat sessions.

Summary: Relevant CMC Research

Research in CMC has focused on many different communication issues that are pertinent to the proposed study, including relational elements, rules, conflict, anonymity, and research in the area of service encounters. Specifically, communication research reveals that CMC interaction is fluid and dynamic with greater flexibility in self-presentation options than FtF communication. A key choice that CMC interactants usually have, and that FtF interactants rarely have, is the ability to remain anonymous. Also, CMC interactants may feel greater comfort to ask questions, and enact a contentious self without penalty, or loss of face. The literature on CMC is a rich history, and the proposed research seeks to extend research on this important context of communication. It seeks to establish a taxonomy of interaction that contains face threats and other forms of conflict that is not yet represented in the scholarly literature, and inform practice for CMC service encounters that are generalizable across industry for

interactions that contain friction. Although CMC literature is rich, research on this important medium has been carried out often through experimental design.

The primary implications from the CMC research reviewed include the need to continue research in this important area, especially given the rate of proliferation and adoption of this mode of communication. Additionally, FtF and CMC interactions possess similar elements that lead to satisfactory interaction, including the need to openness and reciprocity. Another element that impacts the online rapport is the extent to which rules are followed in CMC. It is important to study interactions that possess impediments to better understand which rules violations lead to conflict. Further, impression management and the presentation of self via CMC discourse impact the interaction. Research that examines service encounters in which individuals have choices as to how to exert an identity, or withhold it, may lead to a better understanding of how they the display of preferences may impact a working relationship. Lastly, the literature on conflict and CMC points to different factors that negatively impact interactions. Friction can take on many forms in CMC, and it is important to better understand what types of friction exist in service encounters and also what actions the interactants take to resolve differences, or if any actions are taken to resolve differences. The question of what factors are associated with negative interactions between service providers and those they serve will help illuminate actions that lead to friction to inform professional training and practice. Although much research has been done in experimental designs, research utilizing naturally occurring interactions, especially in the area of service encounters, is not well represented. The research on these interactions in the area of

conflict is even less represented in the literature. These are the gaps that this dissertation seeks to address.

Virtual Reference Research

Reference librarianship in general has been a focus of much research; however, in this section the literature that focuses on VR librarianship is addressed, including the recent history of VR and how this service has been studied. Since the introduction of VR by Telebase, which launched the first live, online customer service with chat capability in 1985 (Kresh 2002/2003; Sloan, 2006), many individual libraries and large numbers of library consortia are offering virtual reference services (VRS). Although the objective of the service is for a user to get a response to a reference query through chat, other work is being done beyond the question and answer process. During the virtual encounter, which takes place synchronously, the mutual construction of the working relationship and interpersonal communication between user and librarian is also taking place in a similar process as in traditional FtF reference encounters (Radford, 1993, 1998, 2006). VR service allows for better and faster ways of making information available, by removing geographic and time constraints, since many services are offered 24 hours a day, seven days a week. Previously known as Twenty-Four/Seven (TS), the largest VR service provider is now QuestionPoint (QP), which is owned by OCLC. QuestionPoint was started in 2002 and is an example of a partnership between OCLC and the Library of Congress' Public Service Collections Directorate. It provides a collaborative network of access to subscribing libraries and consortia. Over 2000 libraries subscribe to QuestionPoint, and others utilize another form of VR software (Dee & Allen, 2006). The State of New Jersey created the first state-wide online reference service, Q&ANJ, which

was introduced to the public in 2001 (Bromberg, 2003; Van Houten, 2004). VR has become a "standard part of reference work in medium to large sized libraries as well as smaller libraries" (Katz, 2002/2003, p. 1).

It is important to study Internet working relationships in the context of VR, since in many cases online interaction is the only interaction a user may have with a librarian, and because the medium itself is integral to users for a variety or personal and professional needs. The Internet is considered the first place people go to address information needs (Kelley & Orr, 2003; Kresh, 2002/2003), and online library materials are the first choice for students and faculty (Carlson, 2002). The VR technology provides users with expanded access to information, and also to information professionals across geographic and temporal boundaries. VR service arose from user demand, and the desire to help online users with vast electronic reference resources, and the desire to produce a viable service for library users (Bromberg, 2003). VR now provides access to users who do not need to physically go to a library to address reference questions, and expands librarian relationships from actual to virtual.

The VR interaction is initiated by an individual (user) and is a goal-driven form of communication in the process of information seeking, which can be defined as "the pursuit of desired information about a target" (Rameriz et al., 2002, p. 217). A study by Radford and Connaway (2006) found that 28% of all VR interactions addressed ready reference queries in a search of a specific fact. Following the initial request for information, the VR librarian begins negotiation with the user to discover and meet the specific information need of the user. This VR communication process, often referred to as a reference interview, involves multiple steps to understanding one another, which has

been compared to FtF interaction (Carter, 2002/2003; Nilsen, 2004; Pomerantz, 2005; Van Houten, 2004). Nilsen (2004) found that the problems in FtF reference encounters and VR encounters are similar. Kazmer, Burnett, and Dickey (2007) sought to understand how identity is represented online in VR using more than 6000 transcripts. These researchers put forth the idea that a satisfactory VR interaction necessitates a focus on users' identity representation.

It is important to study VR as it has become a vehicle to enable contact with increasing numbers of individuals. These individuals seek information through a technology that enables relationships in a way that was not previously possible (Kresh, 2002/2003). The study of this technology and its potential social impact (Sen-Roy, 2004), is relevant and applicable to any type of CMC service encounter.

The VR Research Agenda

Thousands of VR interactions take place every day (Coffman & Arret, 2004) and this is a growing trend (Belanger, Lankes & Shostack, 2003; Hodges, 2002; Lankes, 2002/2003). Librarian and user interactions have been the topic of study prior to the initiation of VR. Elements of FtF reference communication give insights into the needs of the interactants to connect on information needs, as well as to address relational needs (Radford, 1999). These needs are likely similar to what interactants require when engaged in VR. A large body of research about chat reference focuses on the process and management of VR and service quality (Carter & Janes, 2003; Dee & Allen, 2006; Hodges, 2002; Kaske & Arnold, 2002; Kresh, 2002/2003; Nilsen, 2004; Ovadia, 2002/2003; Pomerantz, Luo, & McClure, 2006; Ronan, Reakes & Cornwell, 2003/2002; Shachaf & Horowitz, 2006; Simmonds, 2003; Sowards, 2005) and patron satisfaction

(Cummings, Cummings & Frederiksen, 2007; Kresh, 2002/2003; Stoffel & Tucker, 2004; Van Houten, 2004). Additional research seeks to address elements that underscore VR success (Lougee, 2002; Parker-Gibson, 2005), including internal library communication needs as elements that indicate VR service success (Jankowska & Marshall, 2003). Others concentrate on the sustainability of such information services (Baum & Lyons, 2004). System enhancements (Lankes, 2002/2003) and VR usage for ESL users (Van Houten, 2004) are additional areas of VR research. There is also a focus on VR's impact on the role of librarianship (Van Fleet & Wallace, 2003) and librarians' perceptions of the service (Janes, 2002). VR as a tool for instruction (Fagan & Desai, 2002/2003; Woodard, 2005) also receives attention in the literature.

Although VR service has been the topic of some research, the literature reflects a need to study the communication process itself to better understand working relationship development, and what types of communication may interfere with this process. Ramirez (2007) performed research in a small group communication venue and found that individuals who engaged in direct communication with one another reported higher ratings of relational communication components, including intimacy, social orientation, informality and composure, as contrasted with those who only interacted through CMC. Relational elements of VR interaction have been the focus of some research, including Radford (2006a; 2006b) and Radford and Connaway (2010), addressed relational communication and explored informality between librarians and users in VR.

VR research spans relational development, and also professional librarian attributes that contribute to successful service encounters. It also addresses the types of questions that arise in a VR interaction, with a strong focus on librarians, and relatively

little focus on users. Through many studies regarding the efficacy of VR, and the assessment and evaluation of VR services, it is clear that VRS research is viewed as important (Hodges; 2002; Lankes, 2004; Pomerantz, 2005; Ronan, Reakes & Cornwell, 2002/2003; White, 2001). There are different structures for VR assessment and evaluation. Lankes (2004) proposed that a central element to VR research should be how it is different from traditional reference service. In an effort to address these primary research topics, Lankes developed a survey that sought information from librarians regarding experiences and attitudes, and receiving and answering queries via this form of reference interaction, including an assessment of question difficulty. Similar to research on CMC and FtF interaction, he also sought to compare VR and FtF reference, including research that focused on the demographic information of library professionals. Lankes (2004) had a survey response rate of 42%, and of these responses, 75% of the libraries were found to be offering VR, with larger libraries being more likely to offer the service. "Only 9% of our respondents reported that their library had yet done any kind of systematic user evaluation of their digital reference service" (Lankes, 2004, p. 552). Lankes highlights the reality that little user research or evaluation of VRS was being undertaken. While this research is informative, it does not take into account the development of a working relationship between librarians and users, which underscores the importance of the current study's focus on transcripts that contain friction communication.

Although a majority of the research focuses more on librarians, some research concentrates on the users' perspective, especially around the topics of service satisfaction and quality. Ronan, Reakes, and Cornwell (2002/2003) put forth a research agenda that

concentrated on the users' evaluation of performance, related to the quality of service, as a way to help librarians, as well as improve VR service. Users' needs have also been the subject of some research and methods have utilized unobtrusive assessment, such as content analysis (Hodges, 2002). Findings from unobtrusive methods have been compared and contrasted with other forms of data collection, such as focus groups and interviews, and these findings across data collection and analysis contribute to validity and reliability. In addition to identifying the need to calculate the different types of user queries and librarian answer accuracy, this study found that unobtrusive methods, such as transcript analysis, can be beneficial to service assessment. Additionally, data collection, such as focus group interviews, can serve to obtain direct user feedback about VR service. White (2001) introduced a framework for analyzing and evaluating VR services, which focused on processes, maintenance and service quality. White found that the adoption of the framework can help derive models to identify common practices. These, in turn, could be used to help formulate VR guidelines and qualitative standards that can be used for evaluation and professional and service development. Pomerantz (2005) proposed the union of theory and the study standards and practices of VR interactions, and outlines a range of information that is necessary to gather in order to study chat reference. This information includes question submission, expert selection, question negotiation, searching resources utilized in the transaction, archiving chat transactions, and tracking and evaluation, which are then employed to assess collections and resources. As the author asserts, this is a general process model for service assessment. Pomerantz, Luo and McClure (2006) performed transcript analysis to critique the quality of reference service. Findings indicate that the overall service quality is high, and that the NCKnows

librarians are more engaged with users than 24/7 librarians, albeit no more skilled in research. The studies showed that public librarians provide superior service, and academic librarians provide better referrals. The literature suggests that a strong emphasis is placed on evaluating the service itself, the quality of the service, types of questions posed in VR, and user satisfaction, as well as librarian factors such as experience and attitudes. Following, the span of VR research is reviewed.

VR Research and Interpersonal Communication

More is being accomplished in a VR interaction than just query negotiation; relational elements are also important factors to investigate (Radford, 1993; 1999). The communication also includes human elements, which may vary due to individual characteristics of the interaction (Radford, 1993; 1999; Spink, 2002/2003). Additionally, the communication that takes place is not all on task reference information: "discussions are related to the social or human tasks, norms and practice of human existence" (Spink, 2002/2003, p. 60). Still, others contend that VR communication levels the playing field when it comes to gauging approachability of librarians, with the VR librarians all being equally approachable at the start of a VR interaction (Fagan & Desai, 2002/2003), which is not the case for FtF reference librarians (Durrance, 1989).

Although VR librarians are often trained in how to use chat software, and may also possess professional experience and education in reference librarianship, there may be a gap "on how librarians should act after their chat services are set up and they find themselves in a chat session with a patron" (Ovadia, 2002/2003, p. 158). This can pose a challenge for VR interactions, but there's also the potential for benefits of interactions in VR. Others claim that VR is a positive force that can "bridge cultural and language

barriers" (Baum & Lyons, 2004, p. 84), extend traditional librarian roles into an online environment (Lougee, 2002; Sen-Roy, 2004), extend reference services to other user populations (Carter, 2002/2003, Janes, 2002), and enhance library reputations (Gordon, Gordon & Moore, 2001). Still others contend that VR threatens reference service (Dilevko, 2001) or that VR's usefulness and value is over-rated (Lauer & McKinzie, 2002/2003). From the expansion of chat-based customer service, it is clear that these services will continue to grow and address user and consumer needs across industry. Given that these services are proliferating, this supports the need for additional study to understand what communication elements impede working relationship development and may contribute to dissatisfaction, and friction.

It is important to contrast VR interactions, which are not used for social reasons and are primarily task-oriented, from other CMC, such as IM and e-mail, interactions that may be task-oriented but also are used for more social goals. While many relationships that are initiated socially via CMC may progress to FtF meeting (Ramirez et al., 2002), this is not the goal of VR interactions. Additionally, in contrast to CMC studies oriented to small group communication (Ramirez et al., 2007), VR research is more of a closed system that engages only two individuals at a time. Beyond service, satisfaction, and other process or product assessments of chat reference, there lies minimal additional research that focuses on the communicative and relational transactions between librarian and users. For example, content analysis has been employed to study e-mail reference transcripts (Mon & Janes, 2007). Mon and Janes' findings were drawn from a sample of 810 e-mails from a population of 5,400 questions from the Internet Public Library over the course of a calendar year, and they found that users had a "thank you" rate of 15.9%

(p. 54). What is noteworthy to mention given the research undertaken here, is that Mon and Janes found that relational comments were linked to expressions of thanks from users; of the 558 e-mails that contained thanks, 148 (26.5%) contained "comments on social or emotional aspects" (p. 56), which included mentions of helpfulness. Nonetheless, CMC, and specifically chat in this study, as a medium, can pose challenges to the communication processes. Therefore librarians may need to actively seek ways to make up for its shortcomings. Librarians "must introduce social and even emotional elements and high degree of interactivity through a seemingly impersonal medium" (Fagan & Desai, 2002/2003, p. 125.

Radford (2006a; 2006b) also examined relational content of chat reference interactions. She identified several librarian-user themes, including relational facilitators and barriers, which are speech acts that enhance or detract from the process of interpersonal communication in VR interaction. For example, one relational barrier is negative closure, which includes the termination of a chat interaction in a negative way, such as premature closing, and an abrupt ending (See Appendix B for the RRCS). A few aspects of chat communication have received close attention, and among them are closing problems in chat reference, which have been considered in several recent studies of VR. Closely related to the present research, Radford (2005) investigated chat reference and encounters with rude users. The findings from this research indicate that 39% of the transcripts analyzed included closing problems, in which either the librarian or the user ended the session abruptly. Ross and Dewdney (1998) researched the process of question and answer between librarians and users in a FtF format, and found that the relational barrier of negative closure, which includes strategies librarians use to draw reference

sessions to a close, was also present in this format. Negative closure strategies include not providing a follow up question, as the inclusion of such would encourage the interaction, which is a counter objective to the librarian trying to conclude an interaction.

In fact, findings suggest that users and librarians approach the query negotiation in very different ways. Users approach the interaction to achieve desired information. On the other hand, librarians approach the encounter to provide information, but attempt keep all interactions succinct since they have an obligation to divide their time among many users. What this means for the encounter is that when a user's query can be answered quickly or easily both the user and librarian benefit. On the other hand, if a query is not easy to address, the librarian benefits by terminating the encounter, often with negative closure, and moving on to help other users (Ross & Dewdney, 1998).

Chat transcripts also revealed a degree of socioemotional/relational aspects, which indicates that this form of interaction, similar to FtF interaction, also can carry more personal or emotional elements. Regarding negative interaction, Radford (2006a; 2006b) found that relational barriers in the chat interactions were different for the librarians and users. For example, users were more likely to be rude or impatient, whereas librarians were more likely to engage in negative closure. The turns of chat that preceded the abrupt endings have not been fully explored to identify a connection between the interaction and this type of outcome. The present study will compare transcript content to understand if similar factors are involved when abrupt endings occur.

Fagan and Desai (2002/2003), in a study of VR transcripts, cite CMC behavior that promotes positive interactions between VR librarians and users. The behaviors include: which includes positive feedback, caring attitude, warmth, offering follow up,

humor, the VR librarian knowing when to be formal or informal, showing interest, sympathizing with users, using emoticons, repeated punctuation or bold type, and re-representations of nonverbal communication, such as "giggle" (p. 130). Fagan and Desai note that "traditional methods of introducing emotional content and friendliness into written media are also used in chat" and that, "in online conversations, as in face-to-face reference, the goal is to speak the patron's language, to sound like an approachable human being" (p. 132). Additionally, they assert that the lack of body language and nonverbal cues can be compensated by typed content and techniques. Fagan and Desai also suggest interactivity, such as sending a text every few minutes to let the user know that activity is still being performed on their information need, is an important attribute in the process of the VR interaction. While this research highlights tips and content that promotes a positive VR interaction, it does not discuss areas of conflict, aside from broadly indicating that negative interactions may stem from asking the user too many questions, which would lead to impatience or feeling "put off" (p. 152). The study of friction or conflict demonstrated in interpersonal communication in VR service encounters is necessary to better understand the process and dynamics in a CMC working relationship that impede the rapport and potentially the outcomes of such exchanges.

Connecting findings from FtF reference and VR reference, users find that how they are treated influences satisfaction (Nilsen, 2004), and it is likely that negative interaction decreases satisfaction. Some argue that CMC levels the playing field for all users and librarians because neither the "patron or librarian can form judgments based on race, age, gender, or a busy or uninterested appearance" (Fagan & Desai, 2002/2003, p. 126). However, empirical research findings cite differences instead of equality. In the

communication between librarians and users, elements of individuals' identities may be revealed, which likely affect working relationship development. Another study based on librarian and user interactions by Shachaf and Horowitz (2006) compared responses from librarians to African American and Arab individuals. The study showed that these ethnicities received lesser service quality than other ethnicities. These different ethnicities were determined by ethnic user names, although in each instance the same question was posed. In this research, Shachaf and Horowitz (2006) sought to artificially augment the interaction variables by manipulating user names and gender, while other researchers have based their findings on naturally occurring events.

Summary: VR Research

The scholarly research presented above includes many different communication elements that relate to relationship development, communication strategies, and identity negotiation. Some of these components can be argued to positively support CMC interaction, while other elements of communication may serve to adversely affect a working relationship in CMC, such as closing problems. It is clear that research in naturally occurring VR interactions, and the examination of communication components that act to impede or erode relationship development, are not well represented in the literature. It is necessary to better understand rudiments in VR that affect the development of a working relationship, especially in regard to face threats or friction, user anonymity, and salient librarian identity. Additionally, the context, presence, and relationships between these elements in interaction affect the outcomes of VR encounters. From the review of scholarly research on VR, there is a need to elicit factors that erode working relationships, since such interactions may lead to a decrease in librarian

satisfaction with administering electronic service encounters, or create unconstructive

working relationships with users of such services. Research in VR, as a sub-category to

the wider realm of CMC interaction, will provide feedback on negative interactions that

can be applied to virtual service encounters across industry.

CHAPTER THREE

Theoretical Framework and Model

The theoretical framework section discusses the three major theoretical

underpinnings of the study of CMC interaction between librarians and users. The

theoretical framework for this dissertation is taken from Goffman's Face-work (1967),

Brown and Levinson's Politeness Theory (1978, 1987), and Spears and Lea's SIDE

model of CMC interaction (1992). Each central theory is defined and oriented to the

current proposal, and empirical research is used to illustrate the utility of each theory.

Concluding the theoretical section, a summary is presented to solidify the application of

the theories to address CMC interaction. The following graphic model indicates how each

framework and theory of analysis come to bear on user and librarian interaction in CMC,

and presents a theoretical framework for CMC interaction.

Figure 1

Visual Model of Theory Relationships
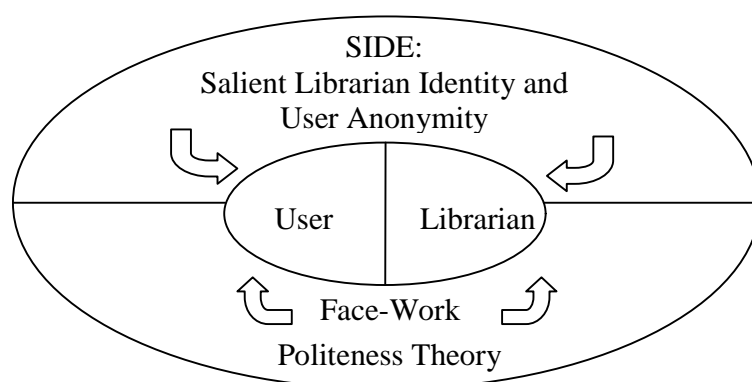
In the model above, for the user, anonymity, face-work, and Politeness Theory are

argued to be primary factors that impact interaction in VR CMC. For the librarian, face-

work and Politeness Theory also impact the interaction; however, given that the librarian has professional ties to a library or consortium, the SIDE model also impacts the interaction since it is argued that the identity presented in VR is more closely related to the profession of librarianship rather than to a librarian's personal identity at the moment of interaction. Since SIDE borrows from social identity theory and self-categorization theories (Spears & Lea, 1994), elements of identity in interaction provide a way of associating individuals not with fixed identities, but rather a situated identity at the moment of interaction. At any point in a CMC interaction, situational forces are at work that impacts the types of communication that takes place, and the content of this communication provides ways of understanding the various situated identities that are salient in a given interaction. These points are expanded upon in each of the following sections, which provide background and relevant aspects of each theory and how they address relational analysis and understanding of VR CMC negative interactions.

Goffman on Face-work

This section is designed to present an overview of Goffman's (1967) concept of face-work, describe how the concept of face-work is incorporated into the study of CMC interaction for the current research, and address current literature that utilizes this framework. Face-work for the current research endeavor is regarded as a foundation of human communication and interaction. Although the face-work framework was established by Goffman, it still has relevance more than 40 years later since it is a concept that broadly defines preferences for interaction and communication. As discussed below, relatively few empirical studies exist that incorporate face-work as a lens through which to view non-FtF interaction, including interaction via CMC. Face-work was a

primary component to the coding process of the initial data analysis (See Method chapter for details). Below is an overview of several primary elements of Goffman's concept of face-work, including face, line, face threat, and avoidance and corrective processes, with a description of the application of these concepts to the study of face threat in CMC.

The face, in terms of Goffman (1967), is a social construction, which means it is created through social interaction and each participant attempts to put forth a desired face in any given interaction. As a social construction, this gives way to fluid and dynamic interactions that are highly interdependent on the individuals involved for interpreting meaning that is taken away from communication. Face is located in the flow of communication, and it is displayed through the communication content and affect, in spoken language as well as textual interaction, which is called a line. A line is defined as "a pattern of verbal and nonverbal acts by which he expresses his view of the situation and through this his evaluation of the participants, especially himself," (Goffman, 1967, p. 5). It is important to note that face does not have to be fixed, and that in any given encounter, the interactants have choices as to which face(s) they present. One may assume that the object of the virtual interaction is a peaceable discussion with a satisfactory outcome for both individuals, one in which both parties maintain face, and do not threaten the face of the other. Goffman (1959) terms this "working consensus" (p. 5) and this type of interaction supports each interactant's face as demonstrated through actions of respect and tolerance. Such an interaction "must be built on the willingness and ability of each party to articulate and disclose his or her true feelings and point of view and the readiness to empathically understand and accept the other party's disclosures" (Jacobs & Aakhus, 2002, p. 196). Given the nature of the FtF interaction, relatively few

choices of face can be selected since social situations are likely associated with a limited number of acceptable behaviors and interactions. Other forms of interaction, such as CMC, may increase the number of choices of face available to the interactants and in these forms of communication there may be a decreased fear of a loss of face.

The presentation of a face in interaction is comprised of the desire to be well-liked and also remain autonomous. This concept is different from identity, which can be a collection of enduring characteristics about a person. Face includes concern for one's face and also the face of the other. Since a face is put forth in each and every interaction, when the interactants change or new interactions arise, it is possible for the interactants to change their face to present a more desirable face in any given situation. FtF interaction may not allow for analysis of lines during an interaction since communication is not always recorded, but other electronic forms of communication may allow for more in-depth analysis. The line interactants use in CMC in some instances is available to review (see Hiemstra, 1982), such as in the chat transcripts produced from each interaction, which enables analysis of two participants enacting a chosen face in discourse. Face threats arise when an interaction becomes impacted by another's action, either physical or verbal, which may lead the individual to feel less liked and/or impact the individual's autonomy.

Face-work is the activity in which each participant is responsible to defend one's own face and also protect or save the face of others. Another important attribute to Goffman's concept of face-work is that participation with others is viewed as a commitment (1967, p. 6), which can be said for any form of interaction with others, including virtual interactions. As part of this commitment, Goffman argues, people have

ordinary expectations of communication and individuals engage in interactions with the

expectation of supporting the face that is consistent with the self image they ascribe to

themselves. To this end individuals utilize lines, both verbal and nonverbal acts, which

seek to carry the meaning or intention of face to co-construct themselves with others

during interaction.

Face-work requires management of one's own actions and careful monitoring of

another's face and actions. When participants are maintaining their own face and the

other's face, it is said that they are in face, maintaining face, to have face, or be in face.

When face is threatened, one or more participants may be said to be in wrong face, shame

faced, or out of face. Face-work, in regard to both the librarian and user VR interactions,

means that interactants are constantly in the process of assessing themselves and each

other through their communication, which provides insight into the line they choose for

the interaction. Part of the face-work librarians do includes upholding their identity (line),

as professionals with reference skills and knowledge about information retrieval.

Similarly, users uphold their identities as students, learners, or productive citizens, or a

range of any given identities.

A user request for information can be viewed as a form of face threat (Brown &

Levinson, 1978) since every request puts a social burden on the hearer. A face threat is

any action that threatens the positive or negative face of any participant and face threats

can be any interaction that may discredit the face. Positive face refers to the desire for

one to be liked. Negative face refers to one's preference not to have his\her actions

impeded. Requests for information are considered face threatening acts because they

require a response from a librarian, and then the librarian must make face-saving moves

to actively preserve their own face in an interaction, while simultaneously attending to face preservation of the user. Likewise, other requests made by the librarians to users are also face threatening acts, such as requesting information about what process they may have used to find the answer to their query prior to logging on to the VRS.

Face threats can happen without intention, or innocently, done with intentionality to inflict shame, or incidentally (1978, p. 14). Face work strategies include avoidance and corrective processes when face threatening actions are detected. Threats to face can occur in any situation, and individuals seek to avoid interactions or contexts in which these threats may occur. A strategy to avoid face threat can be to withdraw from interaction prior to the threat, or to choose not to engage in an interaction when a threat to face could arise, avoid face threatening individuals or topics of conversation. When face becomes threatened, or a face threat has occurred, another strategy that can be employed is the corrective process. The corrective process seeks to rectify face, either one's own or another's face, and restore it. Interaction in every context enacts face-work and poses problems for maintaining face or losing face, which includes CMC, as found with VRS. During any sort of interaction, "every person lives in a world of social encounters, involving him either in face-to-face or mediated contact with other participants" (Goffman, 1967, p. 5). In the virtual forum of VR interaction face-work for librarians and users includes actions to maintain face, taking a line, and entering into a contract to uphold the relationship during interaction. Also during this form of CMC the users do face-work to preserve their face and prevent the loss of face.

Goffman's work has been lauded for its application in media studies (Ytreberg, 2002). Indeed, Goffman's concept of face-work and talk in different environments and

institutions (Goffman, 1981) reveals that his ideas have relevance in any situation with interactants. A review of the literature has located few articles that focus on Goffman's concept of face-work in the library context, and few that focus on face-work and CMC interaction. In the library context, Goffman's constitutive model of communication has been applied to the study of librarian and user interaction by Chelton (1997), in which a service encounter is analyzed as a ritual interaction. In addition, Radford (1996) also assessed librarian and user interaction at a reference desk, using a critical incident approach. In this study, librarians ascribed reference failure primarily to relational aspects of the interaction, rather than the informational aspects of the encounter. These findings indicate that communication theory is applicable to the library setting and that increased awareness of the impacts of communicative elements could help improve relational aspects of reference service that would be of benefit to librarians and users.

Beginning with Hiemstra (1982), face-work has been applied to CMC interaction and other authors have also focused on this concept for their research. Face-work was the focus of Dalsgaard's (2008) research that analyzed the context of Facebook and the presentation of self for the candidates in the 2008 presidential election. Dalsgaard asserts that the Obama-Biden campaign utilized Facebook, and other web-based communication, such as web-sites, to construct the candidates' identities and to engage in face-work. Face was constructed and maintained in this CMC context, and this accomplishment was achieved by the politicians through presentation of self, and also supported by other members of the population in Facebook. In a series of two publications, Park (2008a; 2008b) sought to examine politeness and face-work. Regarding face-work, Park finds that it is a core element to dynamic social relationships. Details of Park's research are

reviewed in the Politeness Theory section, which follows. Research in a chat environment includes the research of Schonfeldt and Golato (2003), who studied turns in interaction during chat room interaction, where these encounters were considered instances of focused interaction (p. 252; Goffman, 1963). This study found that interactants were concerned with making repairs, or corrections, in chat as they would be in FtF interaction, and that the interaction is halted to address any misunderstanding. Also, similar to FtF instances of repair, in chat there is a preference for taking action to repair one's own talk or text.

Another aspect of chat that has been explored in the scholarly literature includes analysis of the intersection of age and information seeking. In VR interaction, generational differences in communication patterns exist, with teenagers using different communication behaviors (Connaway, Radford, Dickey, Williams & Confer, 2008), such as using more informal language. These articles emphasize that face-work is a focus of interaction in a variety of mediated contexts, which underscores the application of this concept to VR interaction. Face and face-work in VR interactions may perhaps allow the users more freedom to assume what could be labeled a rude face because they are free from limitations of other FtF, non-anonymous interactions. Relational elements of chat are other areas that are not well represented in the literature. Radford (2006b) found that relational elements impact the degree of success users associate with a VR interaction. Some librarians are unable to comfortably deal with rude or impatient users and seek to disconnect quickly when the VR transaction continues in a way that is inappropriate (see Radford, 2006b). Ruppel and Fagan's (2002) research on IM chat found that users associated friendliness and politeness with successful VR encounters. Relational elements

and communication style are important elements associated with perceived reference service success. However, more research into unsuccessful encounters and face management is needed to better understand how and why some CMC relationships may not be successful.

Additional empirical evidence that supports the utility of Goffman's concept of face work includes Brown and Levinson's Politeness Theory (1978; 1987), which is described below, and also the recently developed face negotiation theory (Ting-Toomey & Kurogi, 1998), which has been constructed from the primary elements of face-work. Face negotiation theory argues that face is a mechanism used in different face-work strategies to manage conflict, and varies for different cultural groups (Lara, 2003; Oetzel, et.al, 2001; Oetzel, Myers, Mears, Oetzel et al., 2003; Ting-Toomey & Kurogi, 1998; Ting-Toomey, 1988). For example, the avoidance strategy associated with face-work is found to be emphasized with collectivist cultures, to preserve relational harmony (Ting-Toomey & Kurogi, 1998). While face negotiation theory is a very powerful lens to view conflict and the interpersonal maneuvers individuals undertake when confronted with conflict, its perspective is anchored in culture and cultural perspectives, which informs face work on the basis of needs derived from culture. The process to test face-negotiation theory relies on participants' demographic information, which includes collecting identifying characteristics such as ethnicity, and cultural values or norms associated with ethnicity. The recent development of face-negotiation theory serves to illustrate the enduring elements of Goffman's concept of face-work.

Application of Goffman to VR

Face-work, in terms of VR services, means to construct face through every turn in the reference encounter. VR does not mandate that users reveal their name or other personal information that could later serve to identify them, like an e-mail address. Every new VR interaction initiates in a similar process as new FtF encounters – with the first impression, and a face that is put forward. Initial interaction is important and well researched (Ramirez & Burgoon, 2004). In this respect, face-work is evident the moment the VR user types a question and a librarian responds, but typically not in the users' forethought. Whether librarians and users meet online only once or repeatedly, the process of maintaining face is one of constant work.

In any interaction, face-work can be considered the actions each participant utilizes to maintain a positive interaction. Face-work is relevant to the study of CMC, and especially chat interaction, but there are other elements of the interaction that impact the choice of face that is presented and the type of communication that takes place. While Goffman asserts that "it seems to be a characteristic obligation of many social relationships that each of the members guarantees to support a given face for the other members in given situations" (1967, p. 42), the anonymity afforded by the CMC interaction may affect that obligation. The exploration of face-work and potential impacts of anonymity may yield a new understanding of how virtual communications and the presentation of self are shaped in CMC.

Politeness Theory

Using Goffman's concept of face-work, Brown and Levinson (1978; 1987) were able to operationalize message sender and receiver roles to provide insight and utility to

interactional concerns and communicative practices and construct Politeness Theory. Politeness theory is based on Goffman's notion of face-work and consequently accounts for 'face' sensitivity that informs interaction and allows the "inference of implicatures of politeness" (p. 6). The following section builds on Goffman's concept of face-work, give a brief overview of the components of Politeness Theory, review CMC literature that incorporates this theory, and describe the fit of this theory with the present research.

Brown and Levinson (1978; 1987) take Goffman's (1967) notion of face and face-work, operationalize the components of human communication interaction, and carry the concept forward for a theory on politeness in interaction. Politeness is an ingredient in interaction that is used not only to create and build relationships, but also as a way to avoid conflict. Politeness "presupposes that potential for aggression as it seeks to disarm it, and makes possible communication between aggressive parties" (Brown & Levinson 1987, p. 1). Politeness is a tool that is used as a method of social regulation for any group to "control its internal aggression" (p. 1). Politeness theory is thought to possess a foundation for the preference of communication practices and extend beyond cultural constraints and to universally inform interaction.

Politeness theory encompasses components of communication and these various components function to play a specific role in the interaction. The main tenets of this theory include definitions of positive face and negative face, and the assumption that the interactants are rational agents, in that they pursue communication to achieve a desired goal. In interaction, face threatening acts (FTAs), such as requests, can be intentional or unintentional. On the whole, interactants are more likely to choose a course of interaction that is least threatening to the other's or their own face, unless a choice is made to

intentionally threaten face. In interaction, strategies are utilized to guide the interaction. Key terms for Politeness Theory, such as positive and negative face, FTAs, and several strategies used in interaction is described briefly below. Additionally, sociological factors, the context of the encounter, and current literature are also reviewed.

Positive and Negative Face

Politeness theory is a sort of universal script for interaction that integrates Goffman's concept of face-work in that face is "the public self-image that every member wants to claim for himself" (Brown & Levinson, 1987, p. 61), consisting of negative face and positive face. Negative face is "the want of every 'competent adult member' that his action be unimpeded by others" (p. 62). In interaction, negative face guides an individual to seek out opportunities to achieve goals, which vary in any given situation, and also serves to guide others with whom they interact to not impose on the goals or objectives of the other. Negative politeness includes interaction when the interactants take the path that leads most directly to the satisfaction of negative face wants. Regarding VR interaction, negative face wants can be illustrated by a user logging on for assistance and stating that they are looking for specific information. In turn, the librarian will support the negative face wants of the user by obtaining and sending the information to him and not impeding the process by offering services that were not requested at the time.

On the other hand, positive face is the want to be desirable, liked, or approved of, or understood by at least some others. Extending from these positive face wants is the need to have one's goals viewed as desirable by another. Another example from VR interaction could be a user's request for information that he\she finds important to know, and the librarian acting toward this request in support of the information need or by

acknowledging the importance of the information, which in turn supports the positive

face wants of the user. In interaction, each participant takes in information about the

other(s) and also gives off information about oneself, and in this way face and face wants

are found in the flow of interaction and can be impacted by the speaker, or the hearer, or

both. In other words, every participant in a given interaction plays a critical role in the

maintenance of face for all those concerned.

Face Threats

According to Brown and Levinson (1987), there are certain acts that can spark

face threats. In particular, face can be threatened when a request goes without being

fulfilled, when a suggestion or advice is not acknowledged, or when direct threats are

present, such as reprimands, disapproval or criticism (p. 71). An FTA can threaten the

addressee's positive face want and may be performed in such a way that demonstrates the

speaker does not care about the addressee's desires or wants (p. 66). This variety of FTA

takes one of two central forms, one that shows that the speaker has a dubious valuation of

some facet of the addressee's positive face, and the other that shows that the speaker does

not care, or is indifferent to, the addressee's positive face. It is possible for some FTAs to

threaten both the positive and negative face wants. FTAs that can threaten the speaker's

negative face include expressing thanks or accepting the addressee's thanks or apology.

Other examples of FTAs that threaten the speaker's negative face include excuses,

acceptance of offers, visibly noticing an addressee's mistake, which may cause

embarrassment, and if the speaker unwillingly, yet noticeably, makes promises or offers

that he has/she no desire to do.

While most interactions seek to support the face claimed in interaction and actively seek to avoid conflict, some kinds of conflict may be unavoidable. To this end, instances of face threats are communicative elements that are closely related to the current research. Face threats are considered to take place whenever an individual makes a request of another individual, and such requests can threaten either positive or negative face. In essence face threats "attack or undermine the individual's positive public self-image" (Mon, 2005, p. 149). Face threats can also be in the form of complaints, which can produce a counter attack even when they are produced in a respectful manner (Cupach & Carson, 2002), and may also be the result of a misunderstanding or misinterpretation (Mon, 2005). Some indicate a cycle of face threats can be created (Alberts & Driscoll, 1992; Cupach & Carson, 2002), and in some cases these may also weaken the relationship between the hearer and speaker temporarily or even permanently (Leary, Springer, Negal, Ansell, & Evans, 1998). Face threats can be addressed one of three ways, including persistence, seeking another target, or abandoning the request (Ifert & Roloff, 1996). These findings indicate that refusals function in the same capacity as requests, and also pose face threats to the hearers, and can threaten either positive or negative face. These findings were analyzed with dimensions that categorize refusals as willingness-unwillingness, ability-inability, and focus on-focus-off (Ifert & Roloff; 1994; Johnson, Roloff, & Riffee, 2004). Such categorizations of refusals offer a way of coding counter-face threats to initial requests and offer insight into the intention of the speaker or the refusal to indicate the reasoning behind the refusal. Politeness theory has been used to analyze CMC interaction; following are several articles that bear relevance to the present study.

In terms of the current research, the user requests are the basis of the VR interaction, with the user initiating contact with a VR librarian with a request for help and/or information. The relationship between a user and librarian is predicated on requests, which supports Politeness Theory as a useful method analysis of FTAs in VR interactions and to better understand how face threats take place and what may trigger such interactions. The user is not solely responsible for FTAs. As soon as the interaction starts, librarians also may find themselves in a position of making requests of the user, which may be FTAs. Given the nature of requests in VR, a request being unfulfilled by either the librarian or user could illustrate an FTA to negative face, since these may impede the actions of the other. An example of an FTA that threatens positive face can be reprimands or complaints, which indicate that either the librarian or the user does not like, have, or want the same VR outcome needs. Each VR interaction contains at least one request, initiated by the user, and when confronted with an FTA there are multiple strategies one can use to maneuver in the interaction, as is reviewed below. Politeness theory deals with speakers and hearers and in the case of studying turn by turn interaction in VR the librarians and users each function as hearers in some instances and speakers in others. Another way to state the form of communication in VR interactions are that each interactant is the sender and receiver of messages.

Strategies for Doing FTAs

Although FTAs may be performed deliberately, or be unavoidable, a central tenet of Politeness Theory is that "any rational agent will seek to avoid these face threatening acts, or will employ certain strategies to minimize the threat" (Brown & Levinson, 1987, p. 68). FTAs can be performed along a continuum between being very direct and indirect.

There are five potential tactical choices for performing FTAs, including: without redressive action, baldly; positive politeness; negative politeness; off record; not doing any FTA. Some FTAs fall into the category of [bald] "on record" (p. 70), which indicates that they are straightforward requests and are thus difficult to refute that they have taken place. The benefits to on record FTAs include clarity of the request and directness, which make these actions show a degree of honesty.

Baldly done FTAs are performed when the speaker does not "fear retribution" from the addressee and this is evidenced in the communication by "doing the most direct, clear, unambiguously and concise way possible" (p. 69). Bald FTAs possess the benefit of efficiency of the request. Contrasting bald FTAs, some FTAs may contain redressive action, which is action that "gives face" to an addressee, or action that attempts to counteract the potential face damage of the FTA, and indicates that no face threat was intended. Redressive actions include apologies, hedges or softening of the FTA, which also function to give the addressee and 'out,' a face-saving line of escape (p. 70). Redressive action can be performed via positive politeness or negative politeness. Those FTAs that include some degree of acknowledgement of another's positive or negative face wants are categorized as possessing redressive action. Redressive action is any attempt to give face to another, and show an FTA that is modified to support the other's face wants, which is evident in both positive and negative politeness. Positive politeness includes FTAs to show support for the other's positive face, and is a minimal FTA since it indicates to some degree that speaker's and hearer's wants are shared and there is not a negative evaluation of face. Negative politeness is aimed at showing support for the other's negative face wants and indicating that there is at least a degree of reassurance

that those wants will be supported or that there will be effort to not interfere or to minimize any impediments to them.

A second category is off record FTAs, which contain ambiguous intentions, and are open to one or more interpretations by the addressee. Like on record FTAs, off record FTAs also have potential benefits for the interactants. An off record FTA gives the speaker an 'out' in that the speaker can deny the addressee's interpretation and "meaning is to some degree negotiable" (p. 69), and makes it possible for the speaker to avoid responsibility for his action. Off record FTAs include hints or hedges as to potential requests, which leave the hearer in the position of deciphering whether a request was made and deciding if a response is necessary. This variety of FTA, by virtue of its construction, shows that the speaker is aware of and supports the hearer's negative face wants.

The last strategy is the choice to not do an FTA, which is the ultimate form of politeness in that the prospective speaker shows value and support of the prospective hearer's face, and chooses a path that incorporates the least of all possible threats to face.

Sociological Factors of Face Threats

The interactions between VR librarians and users cannot be assumed to possess equality, although the user and librarian in interaction can be argued to possess equality in that each person can type whatever message they choose to. However, empirical research that evaluates the connotation of power between librarians and users is not available. In the current data set, it is not possible to know the attitudes or presumptions made on the part of the librarian and user for the interactions, yet according to Brown and Levinson (1987) it is important to mention that these interactions are likely impacted by

sociological factors. The politeness of every interaction is influenced by three sociological factors, including relative power, social distance, and a ranking of the imposition (Brown & Levinson, 1987, p. 15). Relative power is an asymmetrical relationship between the addressee and the speaker. It is power over speaker because the addressee holds the "power" to comply with the request or not. Here, the addressee may choose to "impose his own plans and his own self evaluation (face) at the expense of [the speaker's] plans and self evaluation" (Brown & Levinson, 1987, p. 77). In terms of VR interaction, the user does not possess as much power as the librarian, as it is likely that the librarian is educated and assumed to possess more knowledge in terms of information retrieval than the user. In addition, the librarian sometimes cites the need to help other users and exercises the power to end the session.

Another important sociological factor is the relationship between participants, which can also be highly influential on the type of communication that takes place and the form of FTA, if present. Social distance relates to the symmetrical relationship status or type between the speaker and the addressee (e.g. friends, strangers, etc.). For the purposes of the research discussed here, social distance is assumed to be that of individuals with no prior relationship and with no intention of future interaction; that is, the VR librarian and user are assumed to not have a prior relationship, and therefore social distance is considered to be symmetrical.

The last sociological factor that is relevant to understanding the relationship between VR user and VR librarian is the ranking of the imposition of the FTA, calculated based on several factors. The concept of ranking is "a culturally and situationally defined ranking of impositions by the degree to which they are considered to interfere with an

agent's wants of self-determination or of approval (his negative- and positive-face wants)" (p. 77). Ranking takes into account the FTA (request) and ranks it in proportion to the expenditure along two scales, one of service and one of goods. The scale of service includes the dimension of time; and goods include non-material commodities such as information. Therefore, ranking is influenced if the imposition is determined to be aligned with an obligation by virtue of employment, such as the role of a VR librarian, which is to address reference queries. However, it could be the case that an FTA is rated as more of an imposition when it is perceived that the speaker could have done the request her/himself. Another factor that reduces the ranking of an imposition is the enjoyment the other gets "out of performing" the required act (p. 77). Again, these factors cannot be measured by seeking input from the participants for the current research; however, these limitations are considered in the discussion and conclusion chapters.

The sociological factors mentioned above are useful when understanding the strength of an FTA, in that an FTA that threatens the hearer's or speaker's face is ranked more highly. In the case of VR service interactions, the initial requests that are made at the start of an interaction can act to threaten both the user's (speaker's) and the librarian's (hearer's) face. The request demonstrates that the user does not possess some knowledge or information, which leads to the request, and subsequently challenges the librarian to know or find the information. Interactions that take place beyond the initial request may serve to pose a threat to either the user or the librarian, or, in some cases, both. The sociological factors serve to calculate the overall weightiness of an FTA.

Context

The context of the interaction may play a role in what type of FTA is found in an interaction. The environment of the interaction could impact the content of the communication in the VR encounter. For Politeness Theory, "the problem here of course is that it is not easy to verify empirically some notion like having in context only one defensible interpretation" (Brown & Levinson, 1987, p. 12), since insight into a wider context could inform the interpretation. Therefore, interaction between users and librarians needs to be considered in the wider context of professional practice and organizational communication for the librarians, and other social or organizational factors for the users. For example, a student may initiate an interaction from school, sitting with friends. In this scenario, the friends could encourage chat that is less polite. Additionally, the librarian could be carrying out the responsibility of VR while also addressing in-person reference users, which again could impact the VR communication. While these third party impacts cannot be measured in the current research, it is nonetheless important to point out that they may impact interaction. The VR interactions captured in verbatim transcripts should be considered as possessing third party influences, some of which are evident in individual transcripts. For example, one transcript appears to have two students present, one who is making rude comments, and the other who apologizes for their friend's remarks. However, while less than 1% of the transcripts in the data set for the current research initiative show interaction like this, it is clear that all correspondence takes place in some specific context or environment, and that these elements may impact the type of communication that takes place (see Limitations for more detail).

CMC Literature that Utilizes Politeness Theory

Politeness theory has been applied to CMC interactions beginning with Hiemstra's (1982) publication. The following section provides an overview of the literature that utilizes Politeness Theory as a lens to view and analyze CMC interaction.

It is important to include Hiemstra's (1982) study of computer conference transcripts using Politeness Theory, as it is likely the first such research undertaking that focuses on CMC and Politeness Theory. This study included four participants who had more than 70 CMC interactions, in which the turn-taking, topic shifts and specific utterances were analyzed, with the shift in topic impacting politeness strategy. In this analysis, concern for face and face threatening acts were found in nearly every utterance. This study found significant instances of positive and negative politeness, yet the observance of off record politeness was found in a singular instance. The scarcity of off record accounts was explained in the context of CMC in that the users' aims included efficiency, lack of nonverbal cues, and specific task communication. Likewise, with the present study, the analysis of positive and negative politeness as compared to off record politeness is assessed. Other studies have utilized Politeness Theory to assess additional forms of mediated communication. Duthler (2006), in an experimental design, utilized Brown and Levinson's (1987) Politeness Theory to study email and voicemail requests, and hypothesized that email would contain more polite speech than voicemail, since email can be edited and voicemail allows callers less flexibility for composing messages. This study supported the hypotheses and found that emails contained more polite requests over voicemail messages. Due to the paucity of research utilizing Politeness Theory in CMC, the proposed research seeks to address the need for additional empirical research.

Holtgraves and Yang (1992) also used Politeness Theory to analyze communication in cross-cultural study that utilized subjects from the United States (N=177) and Korea (N=161). In this experimental design, subjects were asked to imagine situations in which they would make requests. When the hearer's power increased, the politeness of the speaker's communication increased.

Meyer (2001) studied responses from 176 undergraduates in an experimental design that assumed that a request posed a greater threat to the hearer's negative face when the hearer is not well-known. Also when the request is expected to be met with rejection and the request would be less threatening to the hearer's negative face when the hearer is well-known and the hearer is expected to agree to the request. Results indicate that as the imposition of the request increases, politeness of the requests increase. Meyer (2002) analyzed the form and content of making requests in a study in which the primary and secondary components of requests messages were assessed. Primary goals were to influence the other, whereas secondary goals were used to imply that the requester did not want to impose on the negative face of the other. The secondary goal also functioned to manage the relationship between interactants, such as maintaining a friendship. In this study, 226 undergraduates participated in a survey that required the participants to imagine a person they know and think of a request they could make, and to write what they would say to formulate the request message. After articulating the request, students completed scales to rank the importance of five secondary goals. Request topics ranged from a request to borrow, share an activity, request permission, and request to discontinue an activity. The questionnaire also required the participants to rank the person they thought of in forming the various request along scales that measured intimacy, hearer

status, right to ask, personal benefits, and liking. Results indicate that the subject of the request and relationship between interactants impacted the secondary goals. In stop requests, rights to ask predicted the rating of importance and in permission requests statistical significance was achieved in regard to rights to ask. "Depending on the goal, the main effect of liking was a statistically significant predictor of goal importance for either one, two, or three types of requests" (Meyer, 2002, p. 199). These results indicate that negative face-work should rise when hearer's status increases. Significant relationships between variables were not observed. The status of the hearer was only important in permission requests. Anonymity was not a variable in this research.

Face threats are produced by speakers in order to gain compliance from the hearers. Research on compliance indicates that several main categories summarize reasons face threats are refused, which include request imposition, no incentive on the part of the hearer to attend to the request, recalcitrance and possession which may place a higher value on not providing information (Ifert & Roloff, 1998). Another category also was raised in the form of appropriateness, and the judgment of the hearer as to the relative appropriateness of the request and its impact on refusals. Research on responses to refusals found that persistence responses to refusals posed an increase in threats to requester's negative and positive face (Johnson, Roloff, & Riffee, 2004a, Johnson, Roloff, & Riffee, 2004b). In an earlier study Ifert and Roloff (1996) also found support for the relationship between responses to refusals and threats to speaker's positive and negative face, and in both studies when persistence was the response to refusals this indicated the desire to continue the negotiation of the requests. Although these results did not produce statistically significant findings, the relationship between persistence and

threats to speaker's positive and negative face are important elements, which will also be addressed in this study.

Application of Politeness Theory to VR

Park (2008a) cites the lack of studies in communication patterns that address CMC and library and information science literature. Park calls for more research in the area of sociointerpersonal communication, as understanding practice and interpretation may be critical to achieving successful interaction and collaboration. In an analysis of online communication, Park (2008b) applied the Politeness Theory framework to discover communication patterns among real-time chat participants. The study found that politeness strategies are prevalent, and that variables that impacted the type of politeness were related to sociological factors, including power and distance. In the chat interactions, power was found to be symmetrical in peer-to-peer interactions, and the degree of imposition low, which perhaps increased collaboration. In interaction with adult chat partners, students used negative or positive politeness strategies with direct speech or with the inclusion of verbal or nonverbal devises, like hedges or emoticons.

In VR, each time a user logs on to ask a question, the initiation of the query is a face threat, in that it is a request. Each request can act to threaten the face of the recipient since it requires a response. Westbrook (2007) analyzed the formality indicators in chat reference and utilized Politeness Theory and face threat to view interactions. This research analyzed 402 chat transcripts from VR interactions, from a public university over an academic year, with approximately 25 librarians interacting with diverse users. The research agenda included the development of a coding taxonomy. Westbrook's findings included syntactic formality markers and content-based markers that highlighted

the sequential turns in communication between interactants (see also Radford 2006a; 2006b). Findings indicate that librarians use slightly more formality than users, and that use of formality may denote expertise. Perhaps more importantly, Westbrook found that formality may also be attached to the responsibility the librarian takes in his/her role as an information professional. In a VR interaction, it is the librarian who takes responsibility for a successful outcome (Westbrook, 2007). In addition, Westbrook identified linguistic contractions, abbreviations, acronyms and slang, as informality markers, and reported that transcripts that lacked these features may increase the formality levels for both librarians and users. The approach in this research is highly related to the present research endeavor, which also utilizes naturally occurring interactions between VR uses and librarians, which is an unobtrusive data gathering technique, as contrasted to experiments in which research participants are asked to "imagine" making a request to a friend (Johnson, Roloff, & Riffee, 2004a; 2004b; Meyer, 2002).

Social Identity Model of Deindividuation Effect (SIDE)

Another theory for understanding interpersonal relations and CMC interaction is SIDE. SIDE also includes aspects of Social Identity theory, which relates to the interactions between online library users and VR librarians**.** According to Social Identity Theory, one's identity is formed by group membership, and one may belong to many groups. This theory explains how behavior is influenced by group memberships. The theory further explains that when group membership is identified, people are treated in stereotypical ways. This theory could explain some types of librarian/user interaction. For example, if a librarian learns that a user is a minor he or she could begin to interact with

them in ways that conform to an adolescent stereotype, which fits with their group

membership as a student and teenager (See also Chelton, 1997; Radford 2006b). Yet, the

application of this theory would necessitate the researcher to make many leaps in

judgment and assignment of group membership, which may happen when other

information of participants is not available.

The SIDE model is "grounded in distinctive features of CMC use: namely the

visual anonymity of the participant and their physical isolation or separation" (Spears &

Lea, 1992, p. 46). When participating in CMC, an individual may be enacting a personal

or social identity. A personal identity is "one's identity as a unique individual" whereas a

social identity "are aspects of the self corresponding to valued groups or social categories

to which one belongs and with which one identifies" (Spears & Lea, 1992, p. 45). What is

integral for understanding whether a CMC participant is enacting a personal or social

identity is the environment in which the interaction is taking place. The environmental

context corresponds to the "de-individuating conditions (i.e., with visual anonymity)" (p.

47). The effects and communication that transpires "crucially depend on whether group

or individual identity is already salient" (p. 47). For research in CMC in the area of VR, it

may be likely that librarian participants could enact the social identity of being a librarian

and belonging to the organization of a library. Therefore, it is likely that the social

identity of a librarian is more salient in VR interactions due to their professional

affiliation and group membership. Since each transcript remains a permanent record, this

opens the possibility of peer or administrator review. Most VR interactions start with the

librarian introducing him or herself and indicating his or her library affiliation. These

scripted messages encapsulate the member and organization. In some cases, users receive

a full transcript, which means that further evaluation of the interaction may take place. Additionally many transcripts are reviewed by library personnel to identify the accuracy and the quality of these interactions. One the other hand, it is may be more difficult to assess whether a personal or social identity of a user is salient in a VR interaction, as information about these participants is less readily available. VR users have the choice to remain anonymous, and "de-individuating as anonymity should serve to accentuate the effects of the salient identity (social or personal), and the dominant normative response associated with it" (Spears & Lea, 1992, p. 47).

Various social cues can be available in facets of CMC communication, such as headers (Spears & Lea, 1992, p. 46), subject lines, user names, and email addresses, especially those that indicate organizational membership or scholastic affiliation. Additionally, user names and e-mail addresses may give the reader the opportunity to discern age or gender, and the ability to infer social affiliation or personal characteristics (Spears & Lea, 1992). Textual re-representation of nonverbal communication (e.g., emoticons) also may give the reader additional clues to derive inferences about the CMC interactant (See also Walther, 2001). In the case of VR interaction, the content of the query may yield some identity-related information. For example, if a query is raised as a result of an information need for a user's job, this content could provide insight into the user's (professional) group membership.

Spears and Lea (1994) adapted the SIDE model to include two central elements, a cognitive element and a strategic element. The cognitive element corresponds to the salient level of identity or self category, which are the personal or social identities enacted in a CMC interaction. The strategic element follows from and corresponds to the

behavior that is possible or appropriate and aligns with the self category. Another factor that impacts this model is the element of power, which is affected by inter-group relations that may influence or control across category boundaries. Taken together, these elements influence presentation of self.

Again, bringing this back to the study of VR, librarians communicate with users in the context of an organizational (specific library) or consortia of libraries, denoting group membership, and each VR interaction is recorded and saved, and may be referenced by fellow librarians or administrators and assessed for a number of attributes, including answer accuracy or completeness of answering users' queries. Power, in this context, pertains to a degree of surveillance that is afforded by the permanence of VR interactions. Since the transcripts are saved, readily accessible, and potentially audited, it is argued that librarians may be more likely self-categorize themselves with the profession of librarianship, and/or alignment with the librarian's organization or employer, which may be evidenced in the strategic element by taking lines that are appropriate to the profession.

The SIDE model also addresses aspects of anonymity and identifiability (Spears & Lea, 1994), which also may impact VR interactions to various extents. In each VR instance, the librarian puts forth an initial script that contains his or her first name, and occasionally first and last name, as well as the library in which they work or the name of the consortium, which makes the librarian potentially identifiable, and prevents the possibility of librarian anonymity. As mentioned earlier, in rare instances VR librarians use pseudonyms. Even in instances in which librarian use pseudonyms, by virtue of each transcript being saved, other librarians or library administrators can trace back VR

interactions to individual librarians, which also negates the possibility of librarian anonymity, although still maintain an anonymous interaction with users.

SIDE research has largely taken place in experimental designs. Douglas and McGarty (2001) targeted the strategic component of SIDE and studied the flaming behavior in CMC in an experimental design and found that when in-group identity was salient there were higher levels of stereotype-consistent language when referring to anonymous, non-group members. The design specifically addressed the hostility in communication and found no difference when communication occurred with others who were identifiable (which were interactants who supplied an email address) or anonymous. Communication did vary based on the interactant being anonymous or identifiable, with a higher degree of aggressive words (e.g. hate) being used when out-group members were identifiable. The results support the importance of identifiability to an in-group audience in the communication used, which impacts group membership, being favored by the group, and group acceptance.

Another study also sought to address the power of out-group impacts in CMC interactions. Spears, Lea, Corneliussen, Postmes and Haar (2002) conducted two studies via experimental design, which analyzed CMC interactions. The first study randomly divided students among several different groups, some visible, some not visible to other group members, and some who used CMC for the experiment and some who did not, with a total of six groups of three students assigned to each condition. This study found support for interaction in the CMC groups, in which students were more willing to show support for in-group attitudes, which were punishable by the faculty out-group. Additionally, the non-visible condition, which maintained subject anonymity during the

experiment, showed that participants were more willing to show support for in-group attitudes that were not subject to punishment by faculty. This study confirms and supports previous studies regarding the cognitive aspect of the SIDE model in that anonymity and the expression of normative attitudes.

The second study by Spears, Lea, Corneliussen, Postmes and Haar (2002) sought to identify whether students showed evidence of support or not for a particular curriculum requirement of a university. This included a process of analysis to first gauge baseline information on students' attitudes, which indicated that most students opposed the requirement. The experimental design first started with anonymous CMC interaction in a closed forum with other students and the second half of the experiment necessitated that students' identified themselves in a questionnaire that would be presented to faculty. The CMC interactions showed solidarity in attitude toward the issue, in favor of the students' interests and opposed to faculty interests.

Spears and Lea (1992) sought to explain behavior and interaction in CMC environments through experimental design, and the process of factoring out technological effects, and found that deindividuation explains interactional content of groups. Deindividuation is defined as a higher salience of identity with a group identity and less of an affiliation for individual identity, which indicates that individuals interacting in an anonymous CMC environment may be likely to take on identity characteristics that pertain to their group affiliation, producing a common identity between group members (Postmes, Spears, & Lea, 1999). This understanding of CMC interaction impacts the current study since it is highly possible that VR librarians, with protected individual identities by the use of pseudonyms or only first names, may identify with their own

library organization. Nearly every VR librarian is identifiable given that scripts are used to greet users, and in which librarians frequently use their first names. Since each transcript is preserved, library administrators have the ability to monitor VR interactions and use the transcripts to analyze individual librarian performance based on the interaction and outcome of VR interactions.

Although users have more choice when it comes to the decision to self-identify or not, this decision making power is not equal for the VR librarians. In some cases, VR librarians include pictures of themselves on their library's website, so it's possible for users to put a face to the name of the librarian they are given during a chat transaction. Librarians can, however, decide to use generic names, which is the case of New York Public Library (NYPL). In the VRS at NYPL, the librarians that staff the service use pseudonyms, generic male and female names, in interaction instead of their own names. In VR, if the user opts to remain completely anonymous, this decision may play a pivotal role in the interaction between librarians and users. For users, the desire to remain anonymous, and for the librarians, the decision to use a pseudonym is a choice that is informed by personal motivations to protect or conceal identity. What this means for the current study is that interaction of an individual librarian could be viewed as representative of the group to which the librarian belongs if group identity is found salient (Postmes, Spears, & Lea, 1999). The scholars continue to state that, especially in environments in which FtF interaction is not possible, the social influence may be greater than the social norms and identities in some instances.

In regards to the application of SIDE to VR, the norms and behaviors of virtual librarians are imposed by outside forces of professional librarianship, and also reside in

the social self of an individual librarian (Tajfel, 1978). In CMC interaction, although perhaps as an individual and not part of a small group interaction, the "social groups with which we affiliate, the social categories to which we belong, and the social distinctions between ourselves and others do not necessarily disappear under the deindividuating properties of CMC" (Postmes et al., 1999, p. 181). Overall, this research indicates CMC communication has been found to be an empowering medium, a channel of communication that leads to more open social support for in-group members' attitudes, even when such attitudes are punishable by out-group members. These are important findings given the goals of the present research, which seeks to identify how librarians may use strategic communication to illustrate cognitive alignment with non-present librarian professionals, who have open access to transcripts for the purpose of learning, evaluation, and assessment of completeness. Such communication may include content that may seem anti-normative to online interaction between a librarian and user, but show normative alignment to library policy, such as declining a user's request for information and opting to teach the user to navigate the databases and to learn how to search for themselves.

Other studies that utilize the SIDE model in experimental designs include research by Cress (2005), and Lee (2004; 2006; 2007a; 2007b; 2007c; 2007d; 2008). Cress (2005) sought to understand what role identification with a group would play in an experiment designed to find out if group or personal identities were salient, and, specifically, if having access to member portraits would contribute to the presentation of a personal identity being more salient. The participants were challenged with an information exchange dilemma. The 2x2 design divided 84 students into groups, in which

one group had access to member portraits, and the other group did not. The study found that group identity was salient for pro-social participants who did not have access to member portraits, and this group contributed more to resolve the dilemma than those whose personal identities were salient. In this experiment, the lack of member portraits is thought to have increased the salience of group identity, and for the group that did have member portraits this increased personal identity salience. The group with the salient group identity contributed to the dilemma more so than the group with the salient personal identity. The research confirmed the validity of SIDE, and showed that anonymity in CMC can have positive effects, and also suggested that's the SIDE model can accurately predict attitudes and behavior.

Lee (2004; 2008) addressed the SIDE model in an experimental design and found that when anonymous CMC interaction group identity was salient, this led to greater conformity, and when personal level identity was salient, conformity was reduced. Additionally, in Lee's 2008 experiment, participants were better able to process message content and differentiate between strong and weak arguments in an individuating treatment and relied on information from the partners in choosing persuasive arguments. On the other hand, those in the deindividuating treatment were less likely to process message content systematically, and the strength of identification with their partners was of greater consequence for weighing persuasive arguments. In another study, Lee (2006) operationalized depersonalization to be a lack of individuating information and found that depersonalization led to an increased perception and increased conformity to of group norms for female participants. In a later study, Lee (2007a) studied the effects of gendered language cues in anonymous CMC interaction, which utilized only text-based

communication. In this study, participants were paired with others and some of the interactants provided brief personal profiles, while others did not. In the scenarios in which profiles were not presented, participants used language cues to infer gender, and such depersonalization "facilitated stereotype- consistent conformity behaviors" (Lee, 2007a, p. 515).

In another experimental design, Lee (2007a) randomly assigned male or female characters to participants in anonymous CMC interaction, and each female participant was represented with a masculine character and each male participant was represented as a female character. Participants received competing information, with the sex of the character being opposite of the sex-based language. This study found that women who infer characters as masculine also were more willing to accept opinions on a masculine topic, and men were also aligned with the masculine character's opinions more than women's. This study finds that participants identify with available sex-based cues, either visual or in text, and this information impacts interaction. Such findings necessitate further inquiry into CMC as a more equalized form of interaction compared to FtF (Lee, 2007a) and these findings support the SIDE model of interaction via CMC. In another experiment, Lee (2007c) also used randomly assigned cartoon characters and found that participant's gender inferences impacted interaction and also drew out team identification and greater acceptance of the partner's opinions. This study supports that anonymity does not guarantee that social implications of communication will not affect the interaction; rather, the interaction itself, even in anonymous conditions, may be affected by the inference of social categories by the participants. Lee (2007b) randomly assigned 104 participants to individuation or deindividuation groups and a key finding from this

experiment included additional support for SIDE in that deindividuated groups exhibited greater identification with anonymous partners.

Research utilizing the SIDE model has been applied to a relatively few naturally occurring CMC interactions. SIDE has been used to explore identity negotiation of an on-line depression support site (Lameriches & Te Molder, 2003), in which identities are thought to be constructed and negotiated in the process of communication, and not fixed as a social or personal identity. Lameriches and Te Molder critiqued the SIDE model, for treating identity as fixed and for not taking adequate account for context and its influence on the communication that transpires during CMC interaction. This research was directed from a discursive psychological approach, and from this perspective, language found in CMC interaction is analyzed for how it is used, and how context plays an active role in the communication decisions that are made by the interactants. Further, context is viewed as evolving over the course of communication, where "each utterance provides context for what comes next" (p. 457) and informs social action. Findings include support for the idea that identities are much more fluid in interaction, and not just social or personal, as the SIDE mode exerts. Through examination of naturally occurring CMC on a public support site, communication showed that identities moved back and forth between personal and social. This research presents an interesting insight into the potential fluidity of identity presentation in CMC and has bearing on the current research since the personal or social identity of the librarian is assessed through the analysis of strategic communication. It may be the case that librarians move between personal and professional identities or present fixed identities, which are elements that are discussed below.

Application of SIDE to VR

The SIDE model of interaction impacts CMC and the study of VR service interactions in that the interactants perform their roles in traditional ways, as a user and as a reference librarian. Important distinctions need to be made to further operationalize the possible salient identity and self-categorization and make this relevant to the research in VR interaction and the analysis in the present study. Salient identity impacts the normative behavior that is permitted, and this behavior is observable in the communication content of chat transcripts. It is proposed that the salient librarian identity can be either personal or a group identity. Regarding the self categorization with institutional librarianship (information professional), this will produce communication that aligns with the institution or consortium to which they belong; thus communication content in the interaction is attributed in the coding process to a librarian's in-group membership.

Further, if a librarian puts forth a personal identity, this impacts that CMC interaction with norms of behavior and communication, which can be analyzed in the turns of chat in VR transcripts. It may be the case that when personal identity is salient, the communication evidenced could include the denial of an answer for the user, the inclusion of disclaimers about the depth of personal knowledge, and not offering to refer a user. However, if group identity is salient, the norms of the profession of librarianship may become evident when a librarian offers to follow up with a user if a query is not completely addressed, or if a librarian offers to refer the user to another librarian for additional assistance, or when a librarian cites policy for not addressing a user's query. The VR transcripts allow in-depth analysis to identify communicative behavior that align

with the salient identities that are active during interactions, which expands the

application of SIDE to naturally occurring interaction that is not well reflected in the

literature and gives the current research additional import.

    <u>Anonymity</u>

    Anonymity is a component of SIDE, but research on anonymity that does not

utilize SIDE is also relevant and is discussed in greater detail below. Since the users have

the choice to identify themselves by name, email address, or other demographic or

qualitative ways, such as age, gender, school, there may be a difference in interaction in

transcripts that contain identified or identifiable users. In the process of coding transcripts

for face threats, refusals, and responses, transcripts are coded as to whether or not the

users choose to reveal an element of his/her identity in the process of query negotiation.

In the analysis and discussion section, anonymity, as a mitigating variable is examined

for its impact, if any, on the types of face threats, refusals, and responses that are found.

    There are many ways in which someone can become known or remain

anonymous in a CMC interaction. Marx (1999) discusses the types of surveillance that is

possible with communication technologies that serve to increase anonymity on the one

hand and decrease it on the other. Several different types of identity are discussed, some

of which have application to the study of VR service encounters. In any transcript a user

may enter his or her name; however, the name may be a legal name, which could be

traced to identify a specific individual. Other numeric symbols, such as library card

numbers, could also be linked to specific individuals. Also, if users provide an email

address, this is a type of identification, even if a legal name is not included; after all,

"being unnamed is not necessarily being unknown" (p. 101). For the purpose of the study

of VR encounters, users may remain completely anonymous, provide information to make them identifiable, such as symbols (Marx, 1999) such as library car barcode and information that makes them "reachable," such as an email address or user name, or provide fully identifiable information such as a legal name.

Overall, the ability to have a choice to remain anonymous is generally found to be advantageous, as it encourages free expression and may give otherwise inhibited individuals the ability to voice opinions (Scott, 2004). CMC does afford a degree of anonymity, which can impact whether or not consequences are less real in this medium. "In CMC people are less concerned about the impression they are making because of the possibility of identity concealment offered by this medium" (Riva, 2002, p. 585).

Knowledge of another, including physical traits, culture, and status can influence evaluation of the other as well as communication patterns and content. However, if these personal components are not known, this can also alter the content of the communication. "Unlike face-to-face communication, where relations among individuals are influenced by socioeconomic status differences, norms, physical appearance, and speech behavior, individuals using CMC are not required to use indirect paths of interpersonal connections to communicate with other, perhaps socially distant, users: They can simply send a message to any person or set of persons on the system" (Rice & Love, 1987, p. 91). Further, CMC may overcome limitations of FtF due to the context that allows for substantial anonymity during certain interactions (Walther, 1996). Anonymity can give some users the identity protection they need to enable them to initiate a VR interaction and overcome apprehension to ask questions. Interacting in an environment in which anonymity is enabled can make people feel less inhibited in their interactions with others

and this may encourage individuals to deviate from social rules (Sproull & Kiesler, 1991). Even with the ability to remain anonymous, some individuals are reluctant to use VR because they fear appearing stupid or being negatively judged by the librarian (Connaway, Radford, Williams, Dickey & Confer, 2008; Swope and Katzer 1972). The opportunity to remain anonymous may impact the type of interpersonal communication that is present during a VR service interaction.

According to Sproull and Kiesler (1991), due to the distance between real identity and one's online identity, people express themselves more explicitly and freely, and CMC is not held to the same social rules and therefore may feel less subject to criticism and control. Like Goffman (1967), Turner and Hogg (1987) also exert that there is not a fixed self, but variations of self including personal and social identities that are formed in specific contexts.

Furthermore, CMC may enable one to construct a false identity, and draw upon social norms or stereotypes to carry this out in interaction. Riva (2002) claims the use of false identities are very common in CMC (p. 583). Riva points out that deceiving someone in FtF communication is likely more difficult than doing so online, and "the deceiver doesn't have to worry about the high number of relevant identity clues available offline" (p. 584). To construct a false identity, an individual makes use of social stereotypes more so than found in normal interaction to help his/her identity become recognized and accepted. In CMC, it seems that any user has a wide spectrum of alternatives to choose from in selecting a desired self to present, which opens the door for deception. Rumbough (2001) found that CMC served a pro-social role as a means to meet new people, but it also enabled deceptive behavior, and that some individuals opted to

take on a fictitious identity online (p. 227). Lea and Spears (1992) posit that because CMC provides fewer cues to personal identity, an individual has greater anonymity within a group and, hence, a situation of deindividuation is created. Hayne, Pollard, and Rice (2003) performed a study on the effects of anonymity to determine the accuracy of authorship in an anonymous exchange. The participants were in their naturally occurring groups for approximately four months and although individual identity was protected, and the responses in the group support systems (GSS) were technically anonymous, participants were able to assign authorship with 60% accuracy. In a study by Hayne and Rice (1997) two types of anonymity, technical and social, were operationalized. Technical anonymity occurs after identifying information is removed from the content of communication and social anonymity is the perception of oneself or others as deindividuated or unidentifiable (p. 432). Technical anonymity was upheld a degree of social anonymity in that there were frequent misattributions to authorship. This study used naturally occurring groups and a GSS system, which enabled technically anonymous communication between group members who knew each other and communicated previously.

VR interaction is different than GSS interactions in that it is one-on-one interaction. In VR interaction, librarians frequently identify themselves by first names and library names, and in very few instances librarians use pseudonyms, and users are given the option to place an e-mail address at the start of the interaction. Both users and librarians may make salient or inaccurate assumptions of the other depending on these known identifiers. However, in the case of VR interaction, the user and librarian are not likely to know each other, nor have had a previous or have future interaction, which to

some degree makes user anonymity, provided they have not entered in an e-mail address, interesting to study in reference to types of interactions that transpire in the VR context.

Anonymity can also be a positive element to CMC interaction as noted previously. In a study of organizational communication Scott and Rains (2005) found that roughly 20% of employees participated in anonymous feedback via electronic channels, and/or anonymous e-mails, largely related to complaints or suggestions about the organization or management. Anonymity in this context is thought to "promote more open and honest feedback" (p.188). Additionally, more than 21% of the users also posted to bulletin boards or participated in chat anonymously or using pseudonyms. Although power, as a mitigating variable, was not included in this research, it is interesting to note that communication going up the organizational hierarchy was correlated to some degree with the choice to use anonymous channels to convey information, without fear of retribution (Scott & Rains, 2005). In some forums, anonymity gives users a platform to ask questions and avoid social stigma or potentially other negative feelings. For example, in the library context, "patrons can feel anonymous in asking a question they might otherwise be embarrassed to ask" (Fagan & Desai, 2002/2003, p. 126), and some may assume that anonymity may contribute to uncivil behavior. The ability for an individual to remain anonymous does not mean that such a protected identity will necessarily lead to antisocial behavior. Jesuino (2002) proposes that "anonymity observable in a crowd or in a CMC context does not automatically imply a disregard of the social norms" (p. 478).

Exactly what the motivations are for choosing to remain anonymous in CMC interaction is yet to be fully known, understood, and evaluated. Scott (1998) addresses the need to study anonymity and analyze its impact on communication, which is also am

important component of this proposed research. For the purposes of this research

proposal, users communicating with librarians in the process of a VR query do so

anonymously, and remain anonymous until they choose to disclose identity. In this

context of CMC, a user is an anonymous source "with no known name or acknowledged

identity" (Anonymous, 1998, p. 383). While a librarian may possess the skill or ability to

trace an Internet provider address back to a specific user, what matters most for the

interaction is that the user who chooses not to reveal an identity perceives that he or she

is anonymous.

Although the present research explores interaction one-on-one between a librarian

and a user, research in anonymity in group decision support systems (GDSS) shares some

characteristics of the interactions in VR CMC. While VR is designed and dedicated to

answering users' queries, this technology has been used for alternative information needs,

such as seeking out a librarian's identity in instances in which users wish to pursue

particular librarians. Similarly, GDSS have also been used for "ironic" purposes, such as

seeking another's identity (Scott, Quinn, Timmerman & Garrett, 1998). This research

demonstrated that the desire to achieve anonymity in GDSS was a conscious choice and

effort, which is likely a shared characteristic of VR interaction. Scott (1999) sought to

identify impacts of anonymity in GDSS, employing SIDE to explain group members'

identity salience in interaction. In an experimental design, 176 students participated in a

study that centered on the exploration of physical and discursive anonymity. Overall,

results indicate that group identity was salient during interactions. However, discursive

anonymity also produced lower group identification scores. Discursive anonymity

produced more total comments, and impacted the content of the communication more so

than physical anonymity. Discursive anonymity is also correlated to the amount of self-disclosure (Qian & Scott, 2007) with disclosure increasing with discursive anonymity. However, this sort of anonymity is not connected to the current research endeavor, as all comments are attributed to either a user or librarian. In the VR context, although users may be anonymous and both the librarian and users may be physically anonymous, there is no discursive anonymity. This type of anonymity would necessitate that typed messages may potentially be attributed to someone else. In VR, since the communication process, of taking turns typing messages back and forth, shows which party (librarian or users) produced text in the progression of interaction means that discursive anonymity is not possible.

Theoretical Summary

The theories presented above fit together to inform the research perspective for analyzing relational communication in CMC in the following ways. Goffman's concept of face-work underscores every interaction individuals engage in, whether these interactions occur in FtF communication or in CMC. As such, face-work serves as a foundation idea that maintains that individuals, regardless of interaction venue, seek to present a desired self-image, put forth communication that supports the face that is enacted during interaction, and actively engage in face-work activities to maintain the other's face. Face-work enables interactions to proceed without friction and in a way that maintain positive face for all interactants, or in the case of VR interactions, for both the users and librarians.

Politeness theory, which is anchored in face-work, also presents methods of interaction that seek to protect and maintain face for interactants, and provides

operationalized contents of communication that enable the in-depth analysis of how requests are constructed and the ability to classify the types of face threats encountered. SIDE is proposed to affect the librarians' communication if the profession identity is salient in interaction and also anonymity, which in turn may impact the types of face threats that are enacted. Salient identity is also important in relation to the choices that users may make in interaction. When a personal identity is salient for users, anonymity may further reduce adherence to group norms and impact the types of friction or types of face threats posed. This study operationalized users' anonymity ranging from fully anonymous to known, which fits with Marx's (1999) concept of one's legal name. Additionally, librarians' salient identities are operationalized. Flowing from the relationships between the theories, the following section puts forth the research questions.

Research Questions

This dissertation studies VR interaction through the lens of Politeness Theory, SIDE, and Goffman's (1967) concept of face-work and addresses the following research questions in the context of CMC and VR.

RQ1:   What are the types of initial face threats made by users to VR librarians, which includes off record, baldly; positive politeness, or negative politeness (Brown & Levinson, 1987); and face threat orientations in VR?

RQ1a. To what extent are the initial face threats met with some form of agreement and what types of agreement are performed or met with refusal and what types of refusal are evident?

RQ1b: When an initial face threat is refused by a librarian, what is the refusal intensity and what type of face-work is evident in the refusal performed by the librarian?

RQ1c: When an initial face threat is refused, what types of user responses are evident, including persistence, seeking another target, abandoning the request or complying, and with what intensity are these performed?

RQ1d: What is the relationship between the face-work performed by librarians in the process of issuing refusals and the types of responses to refusals that are performed by the users?

RQ1e: What face-work strategies are evident in the users' responses to refusals?

RQ1f: Is there a relationship between the types of librarian refusals to initial face threat and the users' action to leave the interaction abruptly?

RQ2: What is the frequency of subsequent face threats and by whom are they performed? What is the type of face threats performed in the second request, what are the associated face threat orientations, and which interactant performs the second request?

RQ2a: What types of affirmative and refusal responses to subsequent face threats are made, and by whom?

RQ2b: What types of face threats are associated with subsequent requests that received an affirmative response or a refusal? How do these differ between librarians and users?

RQ2c: When refusals are communicated in response to subsequent requests, what is the refusal intensity for each type of face threat and what face-work is

performed with the refusal messages? How are these different for

librarians and users?

RQ2d: How do refusals by users or librarians compare to associated refusal

intensity and what is the relationship between types of refusals and refusal

intensity?

RQ2e In the second requests, what are the responses to refusals and by whom are

they made, and with what intensity are responses to refusals made? What

is the relationship between the types of refusals and the types of responses

made to the refusals?

RQ2f In the second requests, what face-work strategies are utilized in response

to refusal messages and affirmative messages? What is the relationship

between users' second requests and face-work and for librarians' second

requests and face-work?

RQ3: What is the relationship between the types of user initial face threats and the VR

librarians' types of transcript endings?

RQ3a: What is the relationship between librarian refusals for initial requests and

the types of user endings?

R3b: In subsequent requests by users, what is the relationship between librarian

refusals and users' choices in endings?

RQ4. With what frequency do librarians perform a salient group identity or salient

personal identity (Lea & Spears, 1992)? How does salient identity play a role in

the instances of refusal or agreement to perform requests, and in the frequency

and types of users' messages containing friction?

RQ4a: What is the relationship between salient librarian identity and types of

users' transcript endings?

RQ5. How is user anonymity and identity managed in interaction? How often do users

remain completely anonymous or provide information that would contribute to

becoming identifiable, or fully disclose identity?

RQ5a: What is the relationship between users' identity and friction?

R6: What is the relationship between the frequency of the instances of friction

between librarians and users? With what frequency is friction instigated by

librarians or users in the initial and subsequent instances of friction?

R6a: What are the types and frequencies of friction produced by users and

librarians?

R6b: What is the relationship between librarians initiating friction and users

leaving the VR sessions?

R6c: What is the relationship between the instigation and type of friction used

by librarians and librarian identity?

R6d: What is the relationship between the instigation and type of friction and

total number of instances of friction performed and the users' degree of

anonymity?

CHAPTER FOUR

Methodology

This study extends the research in the areas of interpersonal communication aspects of CMC and extends the previous investigation of chat reference of Radford (2006a, 2006b) and Westbrook (2007) with further inquiry into the types and nature of face threat in VR interactions that prevents the construction of a positive relationship during the encounter. The analysis draws on Politeness Theory, face-work, and SIDE.

The process of inquiry includes data collection and sampling, transcript selection for the study of relational tension and face threats, and the use of coding schemes to address important elements related to requests and refusals. Each of these elements is discussed in detail below, including the details of the data analysis. In addition, Figure 2 shows the interaction of theory and analysis.

Although access to any other interactions of the individuals involved in the VR transactions is not possible, the analysis of turns in dialog during reference encounters that present lines and convey meaning, and, specifically, the analysis of transcripts and particular interactions that influence or create a negative interaction or outright face threat, yields insight into the interaction and interactants. Politeness theory views interactions in a wider context to develop an understanding of relational messages (Brown & Levinson, 1987). For the present study of VR transcripts it is necessary to examine the context of the interactions, what is textually available and seek to understand intended inferred meaning, or meaning that is understood as intended by the librarian and/or user.

Nonetheless, face-work, and more precisely Politeness Theory, in combination with the SIDE model of interaction, provides a powerful way to view CMC interaction and analyze transcripts that contain various types and intensities of conflict.

Figure 2

Model of Analysis
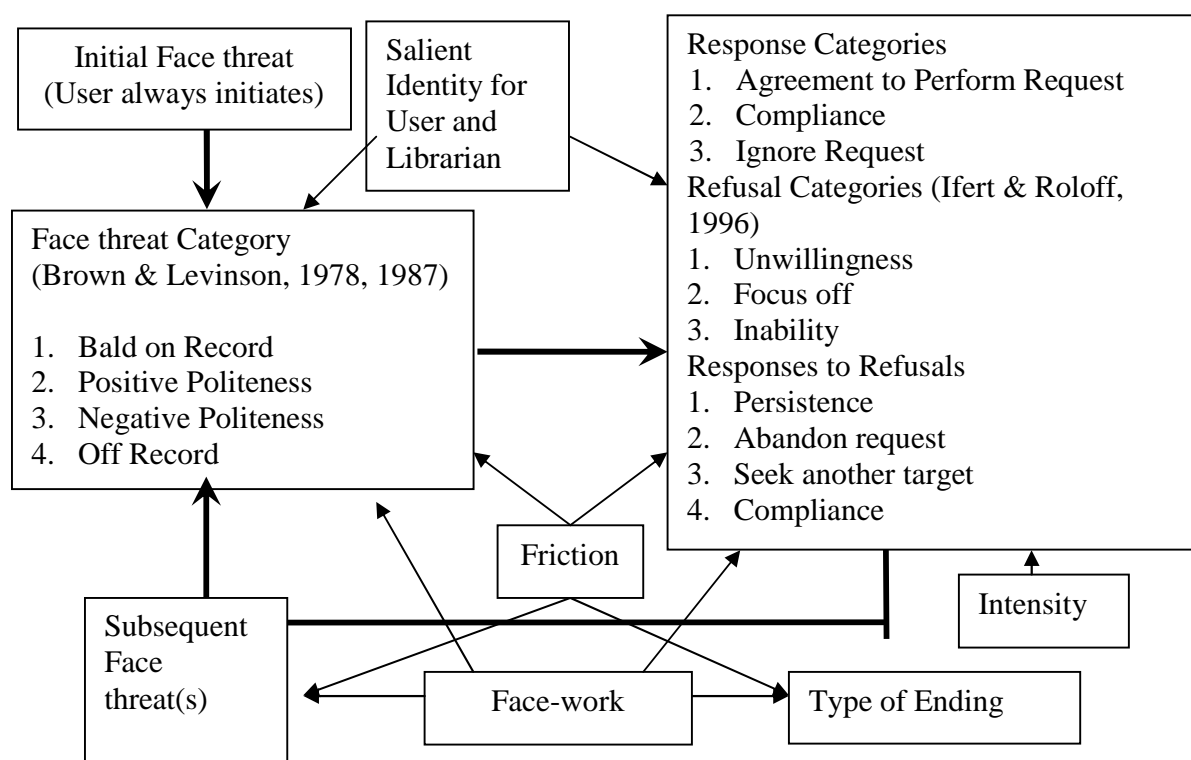
Data Collection

As part of a two and a half-year federally funded Institute of Museums and Library Services (IMLS) grant, "Seeking synchronicity: evaluating virtual reference encounters from librarian, user, and non-user perspectives," VR transcripts were collected for the purpose of analysis. The transcripts were collected via random sampling over a period of 17 months from QuestionPoint, a provider of VR software and services, which is owned by OCLC, Inc. The Library of Congress partnered with OCLC, Inc. in

2001 to develop QuestionPoint, which has more than 1000 library members worldwide.
Between the months of July, 2004 and November 2006 (17 months), there were a total of
479,673 QuestionPoint sessions. On a monthly basis, a random sample of approximately
33-50 transcripts was pulled. The total number of transcripts selected for the purpose of
analysis was 850. This number represents the entire sample; however, due to technical
problems and other interruptions of service, some transcripts have an absence of librarian
and user interaction and are excluded from this sample. The remaining 746 transcripts
were read in detail to determine transcripts that contain any type or quantity of negative
interaction, or negative face-work, which is the center of the analyses to answer the
research questions outlined above.

Every VR interaction results in a verbatim transcript of the interaction as a record
of the encounter. VR transcripts are full, intact textual interactions between a VR
librarian and a user (See appendix A for a sample transcript). The VR transcripts enable
the examination of the exact text used by both the user and librarian. Further, through the
Radford Relational Coding Scheme (RRCS; see appendix B), which categorizes positive
face-work, as evidenced in ritual greetings, ritual closings, and showing of deference, and
also categorizes barriers, which include insults, impatience, and other negative relational
content, each transcript was coded to determine the number of transcripts that contain
barriers. See the preliminary data analysis section, below, for more detail regarding the
coding process and inter-coder reliability.

Since these transcripts have been collected for the purpose of analysis as part of
the Seeking Synchronicity IMLS grant, it is important to distinguish the research
proposed here from the grant research. A component of the grant research is to study the

relational dimensions of VR transcripts utilizing the RRCS to identify relational facilitators and relational barriers that are present in the transcripts. Similar to the grant, Seeking Synchronicity grant, transcripts were analyzed using the RRCS, which defines relational aspects of chat interactions between positive, relational facilitators, and negative categories, relational barriers. Specifically, Radford (2006a) provides a detailed coding scheme for categorizing relational facilitators and barriers in the interactions between librarians and users. However, the focus of the grant research is on relational dimensions as a whole, without specific in-depth focus on negative interactions, which is different than this study. Another way this study differs from the research on the grant is that it seeks to not only identify negative interactions, but also to look at the wider context of its occurrence in the transcripts and specifically analyze the frequency with which negative interactions are instigated by the VR librarian or the VR user.

Further, a closer look at face threats in the transcripts was conducted, with analysis of possible line deviation, and changes in the represented face of the individual participants with a focus on the outcomes of the face threats. Through the lens of the RRCS each transcript was analyzed for negative relational content, and those that contain any interaction that is identified as a "barrier" were further assessed for the dimensions of face threats that are present. A barrier is any communication during a chat interaction that has a negative impact on the relationship or that impedes the relationship or communication (Radford, 2006a). The facilitators are interpersonal elements of the chat conversation that have an affirmative effect on the interaction and improve communication (Radford, 2006a). The verbatim interactions captured in the transcripts yield a turn by turn creation of the virtual relationship and the potential loss of face for

participants, and each turn served as the basis for analysis, as well as the context of the entire interaction.

Transcript Selection and Preliminary Data Analysis

The entire data set of 850 VR were downloaded from the database at OCLC and, through the work of a research assistant at OCLC, were stripped of identifying information prior to being received for analysis. Unusable transcripts, such as technical problems, test transcripts, or languages other than English were discovered and removed. The remaining 746 transcripts were coded with the RRCS, which is the preliminary coding process for the set of transcripts. The relational coding process then led to the identification of a set of transcripts that contained significant relational barriers, which is the corpus of the data set for the analysis of face threats, and resulted in a subset of 473 transcripts, or 63%. According to the RRCS, relational barriers can range from an abrupt ending, such as a user or librarian leaving a VR session with out a closing ritual, to terse statements, such as "may I have another librarian."

The entire data set was initially coded using the RRCS for relational facilitators and barriers based largely on Goffman's concept of face-work (Radford, 2006a). This study started with the results of the preliminary data analysis, focused only on transcripts that contained one or more relational barriers, and extended the research and coding of transcripts that included relational barriers to more fully investigate interactions, types of face threats, the formulation of requests, the nature of refusals, and the corresponding actions of users and librarians. While the preliminary study was used to help identify transcripts with friction, the coding scheme from the preliminary study was not utilized in

the present study. Rather, a new coding scheme, discussed below, was constructed to code the transcripts that were found to contain friction.

The preliminary analysis was facilitated by using NVivo qualitative software (www.qsr.com). The process of the preliminary data analysis in the Seeking Synchronicity grant utilized the RRCS, and each transcript was analyzed line by line for relational facilitators and barriers. In many cases, units of analysis and the assignment of the codes were applied to individual lines of discourse. However, in some instances, individual words and other textual elements were coded, such as the use of flaming text, or the use of ellipses. Additionally, the unit of analysis was the entire transcript in the cases where both the user and librarian used lowercase throughout most of the transcripts to code the entirety of these types of interactions.

A total of 746 transcripts were coded using the RRCS (2008), with a primary coder coding approximately 55% of all transcripts (455 transcripts), and three additional coders each coding approximately 14.7% of the transcripts (110 transcripts each). Inter-coder reliability testing was done in the preliminary analysis, and when a second coder was given a portion of the transcripts. The process of inter-coder reliability started with an individual collecting a random sample of 10% of the coded data, and coding it without knowledge of the original assignment of codes. After that 10% sample was completely coded, the coder and the primary coder and an additional coder compared the outcome, and the initial percentage of agreement was calculated to be the degree to which both sets of codes matched. After discussion of the codes that were different between the coders, the result was a second percentage of agreement. The resulting inter-coder reliability scores for percent agreement ranged from 85% to 95% prior to discussion and from 95%

to 100% following discussion. Coding utilizing the RRCS produced an overall inter-

coder reliability of 97.5% of agreement.

473 of the corpus of 746 transcripts were coded with some form of relational

barrier(s). Table 1 below includes the listing of relational barriers for the RRCS. See also

Appendix B for the RRCS complete list of relational facilitators and relational barriers.

Table 1:

Relational Barriers According to the RRCS

Relational Barriers
Relational Disconnect Failure to Build Rapport
Condescending
Derisive Use of Spelling NV Behaviors
Disconfirming
Failing to Offer Reassurance
Failure or Refusal to Provide Information when asked
Goofing Around
Ignoring Humor
Ignoring Self-Disclosure
Impatience
Inappropriate Script or Response
Inappropriate Language
Jargon, No Explanation
Lack of Attention or Ignoring Question
Limits Time
Mirrors Rude Behavior
Mistakes
Misunderstands Question
Reprimanding
Robotic Answer
Rude or Insulting
Negative Closure
Abrupt Ending
Disclaimer
Failure to Refer
Ignoring Cues that User Wants More Help
Premature or Attempted Closing
Premature Referral
Sends to Google

The preliminary data analysis gives the counts of these types of barriers and also who has performed them in interaction from the Seeking Synchronicity (2008) grant. Table 2, below, provides the number of transcripts that contained barriers, as well as the total counts of instances of user relational barriers. Some categories contained a relatively large percentage of codes, including the occurrence of disconfirming messages, impatience, and abrupt ending of chat interactions. As noted above, this analysis reflects the lines in chat transcripts that users were responsible for. Table 3, below, provides the counts of transcripts and instances for relational barriers put forth by librarians.

Table 3 provides the outcome of preliminary data analysis for messages sent by librarians during VR interaction with users. Similar to the users' counts per relational barrier categories, the librarian's chat messages also presented higher counts for some forms of barriers. The categories that received the highest number of instances include limiting time, failing to offer reassurance, disconfirming messages, abrupt ending of chat session, premature attempted closing, and making disclaiming statements.

Table 2

User Counts for Relational Barriers

All Users (N=746)	Number of transcripts out of 746	Count of instances
Relational Dimensions		
Barriers		
Relational Disconnect Failure to Build Rapport		
Robotic Answer	0	0
Reprimanding	6	6
Limits Time	1	1
Lack of attention or Ignoring question	0	0
Condescending	7	7
Ignoring Self-Disclosure	0	0
Misunderstands Question	0	0
Inappropriate Script or Inappropriate Response	2	2
Failing to Offer Reassurance	3	3
Mirrors Rude Behavior	1	1
Disconfirming	47	61
Ignoring Humor	0	0
Impatience	20	32
Rude or Insulting	12	17
Use of Inappropriate Language	10	13
Failure or Refusal to Provide Information when Asked	6	6
Derisive Use of Spelling Out NV Behaviors	0	0
Mistakes	1	1
Goofing Around	8	19
Uses Jargon No Explanation	9	9
Negative Closure		
Abrupt Ending	288	289
Disclaimer	0	0
Premature or Attempted Closing	2	2
Ignoring Cues that User Wants More Help	0	0
Premature Referral	0	0
Sends to Google	0	0
Failure to Refer	0	0

Table 3

Librarian Counts of Relational Barriers

All Librarians (N=746)	Number of transcripts out of 746	Count of instances Within Transcripts
Relational Barriers		
Relational Disconnect Failure to Build Rapport		
Robotic answer	8	11
Reprimanding	12	15
Limits time	21	22
Lack of attention or Ignoring question	16	19
Condescending	7	9
Ignoring Self-Disclosure	14	15
Misunderstands question	3	4
Inappropriate script or inappropriate response	13	15
Failing to offer reassurance	23	28
Mirrors rude behavior	2	2
Disconfirming	22	24
Ignoring humor	2	2
Impatience	3	4
Rude or Insulting	0	0
Use of Inappropriate Language	0	0
Failure or Refusal to Provide Information when Asked	16	17
Derisive Use of Spelling Out NV Behaviors	0	0
Mistakes	0	0
Goofing Around	2	2
Uses Jargon no explanation	9	9
Negative Closure		
Abrupt Ending	70	70
Disclaimer	26	35
Premature or Attempted Closing	21	24
Ignoring Cues that User Wants More Help	16	20
Premature referral	18	18
Sends to Google	14	14
Failure to refer	8	11

The preliminary data analysis provided insight into what kinds of relational barriers are present in VR interaction between librarians and users, and also which participant is responsible for sending chat messages during interaction. However, this analysis does not assess these as dependent turns in talks starting with a request and its connected response. In addition, communication components, specifically those that pose threats to positive or negative face, were addressed in the present study with the goal of understanding how messages are articulated and understood, as evidenced by communication in reaction to face threats. Additionally, this study sought to understand the surrounding constructs of messages that contain face threats and identify triggers to these threats. The preliminary data analysis was formulated into new territory that focused on how refusals are formulated and what the response to refusals included, as well as the responsible party for doing the refusals in chat interaction. Although some foundational elements, such as the basis of Goffman's concept of face-work, demonstrate the alignment between the preliminary analysis and the analysis in this study, new insights have been produced to understand the service encounters.

Coding Instrument Development

The initial coding via the RRCS has produced a sub-set of 473 transcripts that contain relational barriers, which was reviewed for instances of friction. This led to the data set for this study, which consists of 168 transcripts, or 23% of the original sample of 746 usable transcripts. Further analysis was conducted to gain insight into who is doing the face threats, what type of negative face-work is being displayed, the reasons behind the instigation of the face threats, assessment of the types and reactions to refusals, what the outcome of the face threat may include, and to what intensity face threats lead to

hyper-negative face-work. This analysis concentrated on requests and responses and utilized a new coding scheme that sought to not only isolate lines that users and librarians use, but also understand the context and turns in chat that inform inferences made and subsequent requests or face threats, refusals, and responses to refusals that occur during a chat interaction. To this end, the discussion below addresses face threats and operationalizes these terms in relation to definitions and statements that could be made to illustrate each category. Additionally, the new coding scheme for this study is presented, and the approach to inter-coder reliability is discussed. Specifically, the following section will discuss inter-coder reliability, the development of the Textual Semantics Coding Scheme, and units of analysis.

<u>Inter-coder Reliability</u>

Given the communication interaction of the elements that comprise the coding scheme and the context in which analysis takes place (VR), the new coding scheme is referred to as the Textual Semantics Coding Scheme (TSCS) (See Table 4; also see Appendix C for the full TSCS). Reliability testing of the TSCS is necessary to assess the application of codes and how well the instrument facilitates coding. Inter-coder reliability is necessary so that it is possible to gauge the consistency of coding using the TSCS. To make clear the distinctions between categories and how they correspond with the data from VR interaction, a test of the TSCS was be conducted to assess its reliability and also develop a taxonomy of verbatim quotes from the data to further operationalize the coding scheme for this CMC context (See Appendix D). To evaluate the reliability of the TSCS instrument, a sample of 5% (N=8) cases from the data set of 168 transcripts of the sample data set was used to assess the coding process and the coding scheme design. Cohen's

Kappa was used to assess inter-coder reliability, which returned kappa values between .61 and 1.0 for the coding categories. A goal of the inter-coder reliability testing was to more fully operationalize these face threats and identify representations from the data to provide specific illustrations that apply to CMC interaction in general and VR interactions specifically, as well as provide a baseline method that may be replicated in future studies.

Development of the Textual Semantics Coding Scheme

This study is anchored in textual interaction between librarians and users. In each interaction, the participants type requests, questions, and responses and play active roles in creating meaning. The intention of the text and its actual interpreted meaning is contextual, and many different interpretations are possible. In these ways, the interaction is completely textual and each turn is constructed based on the semantics found in the preceding text or inference, and these core elements informed the name for the coding instrument.

The need to numerically operationalize the qualitative data in the TSCS allowed for relationship testing between the requests, responses, salient librarian identity, and degrees of user anonymity by using bivariate analysis. The coding scheme contains several nominal variables that show difference in the category of interaction, and do not pertain to any sort of hierarchy of interaction. The assignment of numbers for these items designates the specific category the data belongs to, and the number can be entered into SPSS for later descriptive statistical analysis and relationship testing. Additionally, a few components have been operationalized to show magnitude, such as the intensity of refusals face, which include the use of ordinal scales, since these types of interaction

range from indirect to direct face threats. In addition to coding line-by-line, the intersections of anonymity and situated identity were compared to politeness strategies, face threats, responses, and refusals. That is, once the transcripts were analyzed for the content as it relates to these discrete elements, further analysis was done to identify relationships between these elements (See Table 4).

This study employed terms that were used to view language as a form of social interaction, and also as constructs to categorize text and code interactions. Given the intersection of several approaches to this study, a core glossary has been created that addresses core concepts and consolidates a working vocabulary derived from the theoretical framework for this research, and each concept is associated with transcript examples (see Appendix C). In addition to defining Goffman's concepts of face-work, anonymity, and salient identity (Postmes, Spears, & Lea (1999), the glossary of terms includes definitions and statements that aid in the illustration of the types of face threat (requests) that may take place in a chat interaction. These statements are adapted from Brown and Levinson (1987) to exemplify the types of requests and statements that are found in chat transcripts.

Table 4 provides each aspect of analysis and aligns these with the research questions and theory. To apply the coding scheme, starting with the initial user request, each face threat was analyzed to assess the face threat type enacted. Following the initial request, and every subsequent request, the responses were also be coded to assess what strategy of acceptance or refusal is used. Additionally, responses to refusals were assessed to identify the types of strategies librarians or users employed after receiving refusals.

Units of Analysis

Each of these transcripts were coded on a line-by-line basis, using a coding scheme drawn from Brown and Levinson's (1978, 1987) Politeness Theory, and further defined using Ifert and Roloff's (1996) exemplars of obstacles categories and response codes, and salient identity (Postmes, Spears, & Lea, 1999). Each face threat starting at the request and ending at its resolution formed a single unit of analysis for the application of the TSCS. This process was repeated for each subsequent face threat. The resulting codes indicate who is responsible for the face threats (user or librarian), the occurrence of various face threats by category, and the communicative outcomes of face threatening acts. Each transcript served as a unit of analysis for both users' and librarians' situated identities(Postmes, Spears, & Lea, 1999), was useful to understand the relationship between face threats and refusals. Theory to assess what kinds of face threats occur and whether they are directed at positive or negative face concerns. The transcripts utilized for this study all contained form of relational barriers, and coding process for the current study allowed for the identification of new types of friction that negatively impacted the interactions, which may be used to expand the RRCS.

Data analysis for the current research had several steps. First, the initial face threats were coded and then the librarians' responses to the requests were coded for agreement or refusal, along with the related intensity with which each message is produced. Next, the users' responses to refusal was coded for types and related intensities. This process was repeated for each subsequent face threat that was identified. Additionally, face-work evidenced in face threat, refusals or responses to refusals was also assessed. Additionally, statistical analyses will be performed to learn of the strength

of relationships between different elements of the coding scheme and the significance

level is p=.05 and this will be the primary mechanism of gauging statistical significance

Table 4

Textual Semantics Coding Scheme (TSCS) Theory and Related Components

RQ #	Theory	Coding application
RQ 1 & 2	**Politeness Theory** (Brown & Levinson, 1987)	
	Face threats (Requests)	Bald on Record
		Positive Politeness
		Negative Politeness
		Off record
	Face threat to:	Threat to speaker's positive face
		Threat to speaker's negative face
		Threat to hearer's positive face
		Threat to hearer's negative face
	Responses	Compliance
		Agreement to perform request
		Ignores request (Positive face threat)
	Refusals	(Johnson, Roloff, & Riffee, 2004)
		Unwilling
		Inability
		Focus off
	Refusal Intensity (5 pt. scale, ranging from High to Low)	
	Responses to Refusals	(Ifert & Roloff, 1996)
		Persistence
		Seeking another target
		Abandoning request
	Responses to Refusals Intensity (5 pt. scale, ranging from High to Low)	
RQ 3	**Face-work** (Goffman, 1967)	
	Face-work strategies	Avoidance
		Repair
		Corrective action
	Closings	Closing rituals to end interaction
RQ 4	**SIDE** (Postmes, Spears & Lea, 1999)	
		Personal Identity Salient
		Group Identity Salient
RQ 5	**SIDE** (Postmes, Spears & Lea, 1999) **User Anonymity**	
		Completely anonymous user
		Identifiable (First name; or email address; or school name disclosed)
		Identified (User name disclosed)
		Known (As indicated by familiarity)

In addition to the concepts in Table 4, each transcript was coded for who initiated friction, types of friction, and overall counts of instances of frequencies. Each transcript was also coded for salient identity, which included a salient group or personal identity for librarians and degrees of anonymity for the users. Types of face threats, intensity of refusals and responses to refusals and salient identity were compared to the types of endings produced in the transcripts for users and librarians.

The research in the politeness of requests and refusals has not been previously operationalized utilizing a numeric coding scheme to code data, which is a novel approach of this research addressed for interaction in CMC. The TSCS, presented below, provided codes for the types of face threats (Brown & Levinson, 1987), types of refusals (Johnson, Roloff, & Riffee, 2006), responses to refusals (Ifert & Roloff, 1996), subsequent face threats, and situated identities (Postmes, Spears & Lea, 1999). Each research question associated with data analysis is shown in its relation to coding scheme items.

The elements of the TSCS can be addressed as categories of interaction that were analyzed in each transcript. Each of these coding elements is represented in Table 5, and each element is associated with numeric codes, which enabled them to be entered into SPSS for purpose of descriptive statistical analysis and bivariate analysis to test the relationships between the actions. As Table 6 shows, scale items are operationalized with binary and also multiple values, which makes it possible to apply more advanced statistical analysis, and potentially develop a predictive model.

Table 5

Textual Semantics Coding Scheme Categories and Scales (See pp 99-102 for the complete listing of research questions)

RQ 1:			
Face threats (Initial Requests): Nominal Scale			
1	2	3	4
Off record	Negative Politeness	Positive Politeness	Bald on Record
Face threat orientation: Nominal Scale			
1	2	3	4
Threat to speaker's positive face	Threat to speaker's negative face	Threat to hearer's positive face	Threat to hearer's negative face

RQ 1a		
Responses: Nominal Scale		
1	2	3
Compliance	Agreement to perform request	Ignores request (Positive face threat)
Who responds: Nominal Scale		
1		2
Librarian responds to user		User responds to librarian

RQ 1b		
Refusals: Nominal Scale		
1	2	3
Unwilling	Inability	Focus off
Intensity of refusal ranging from simple refusal to intense refusal: Interval Scale 1-5		
Who refuses: Nominal Scale		
1		2
Librarian responds to user		User responds to librarian

RQ 1b				
Refusal Intensity				
1	2	3	4	5
Low	Slight	Moderate	Acute	High

RQ 1b				
Face-work strategies and Responses: Nominal Scale				
1	2	3	4	5
No face-work	Avoidance	Repair	Corrective Actions	Other
Who responds: Nominal Scale				
1			2	
Librarian responds to user			User responds to librarian	

RQ 1c		
Responses to Refusals: Nominal Scale		
1	2	3
Persistence	Seeking another target	Abandoning request
Intensity ranging from simple refusal to intense refusal: Interval Scale 1-5		
Who responds to refusal: Nominal Scale		
1		2
Librarian responds to user's refusal		User responds to librarian's refusal

RQ 1e				
Face-work strategies and Responses: Nominal Scale				
1	2	3	4	5
No face-work	Avoidance	Repair	Corrective Actions	Other
1			2	
Librarian responds to user			User responds to librarian	

RQ 2			
Face threats (Subsequent Requests): Ordinal Scale			
1	2	3	4
Off record	Negative Politeness	Positive Politeness	Bald on Record
Face threat orientation: Nominal Scale 1-4			
1	2	3	4
Threat to speaker's positive face	Threat to speaker's negative face	Threat to hearer's positive face	Threat to hearer's negative face
Who does subsequent face threat: Nominal Scale			
1		2	
Librarian responds to user		User responds to librarian	

RQ 2a
Uses the same coding structure as RQ 1a

RQ 2c
Uses the same coding structure as RQ 1c

RQ 2d
Uses the same coding structure as RQ 1b

RQ 2e
Uses the same coding structure as RQ 1e

RQ 2f
Uses the same coding structure as RQ 1e

RQ 4:	
Salient Identity: Nominal Scale	
1	2
Personal Identity Salient	Group Identity Salient

RQ 5:			
User Anonymity: Nominal Scale			
1	2	3	4
Completely anonymous user	Identifiable (First name; or email address; or school name disclosed)	Identified (Full user name disclosed)	Known (as indicated by familiarity)
Prompts for identity revelation:			
1		2	
User self-discloses identity or identifiable information		Librarian requests user self-disclose identity or identifiable information	

The coding scheme above was designed to capture the categories of initial and subsequent face threats, responses, refusals, and responses to refusals, as well as who is doing the actions. Several other research questions are not addressed in Table 5 since they addressed relationships between coded content; these include RQ1d, RQ1f, RQ2b, RQ3-3b, and RQ6-6d. These research questions were answered by conducting two-way contingency table analysis.

CHAPTER FIVE

Results

Analysis of the subset of original 746 VR transcripts, which were randomly selected over a 17 month period, identified 23% (N=168) individual transcripts that contained a type of friction between the VR librarians and VR users. The 23% (N=168) represents 36% (N=473) of the transcripts that were coded as containing elements of relational barriers in the preliminary coding process. The following section details the results of analysis for each research question. Analyses performed include frequencies, and two-way contingency tables. The percentages reflected in the results section are rounded to the nearest whole percent.

Results for RQ1

What are the types of initial face threats made by users to VR librarians, which includes off record, baldly; positive politeness, or negative politeness (Brown & Levinson, 1987) and face threat orientations in VR?

Of the 168 initial user requests in the VR transcripts, 5% (N=8) were coded as off record, 6% (N=10) were negative politeness, and 89% (N=150) were bald on record. 100% of transcripts demonstrated the face threat orientation of threat to hearer's negative face (See Table 6). The bald on record face threats were straightforward queries that focused on specific information needs. Few of the initial face threats issued by users were off record face threats. Face threats that were bald on record were direct questions, whereas off record requests did not point to the need for a particular response or information need, such as a website or journal article. Also very few face threats performed with negative politeness were observed. The negative politeness face threats

included only fragmented questions, which could be ignored by librarians since they do

not impose a specific information need to direct the need for a question to be answered.

Table 6

Face threat Types and Transcript Examples

Term/Concept	Transcript Example
Bald on record (without redress):	"What helps identify products, store goods, and arrange displays in a store" (qp74)
Negative Politeness	"Sophie kept track of how many points she go in 6 ping pong games None of the scores are higher than 21. the range is 10 points and the mean is 17 points." (qp436); "facts on wyoming" (qp524)
Off record	"I want to learn about how to have telekinetic powers" (ts110)
Positive Politeness	No transcript examples

Results for RQ1a

To what extent are the initial face threats met with some form of agreement and what types of agreement are performed; to what extent are initial face threats met with refusal and what types of refusal are evident?

Of the 168 transcripts, 71% (N=119) of the users' requests were met with some

form of affirmative response. Specifically, 25% (N=30) were answered by compliance

and 72% (N=86) received agreement to perform the request, and 3% (N=2) of the face

threats made by users were ignored by the VR librarians. As indicated in Table 7,

agreement to perform the request is a type of affirmative response that shows, textually,

that the librarian is willing and able to perform the request, which infers that the next

actions on the part of the VR librarian will be to carry out the user's request. Compliance

takes agreement one step further in that the next action in the transcripts in response to

face threats for VR librarians actually provides information, or answers the query.

Table 7

Affirmative Responses and Examples

Term/Concept	Transcript Example
Agreement to perform request	"Please wait while I check some sources." (qp436)
Compliance	"Vertigo is defined as "the sensation of dizziness" or "a confused disoriented state of mind (from the American heritage Dictionary, p. 1525" (qp353)

Although many VR users' initial face threats received some form or affirmative response from VR librarians, in 168 transcripts, 26% (N=44) were met with some type of refusal by a VR librarian (See Table 8). Of these transcripts with refusals following the initial face threats, 48% (N= 21) of the librarians' responses were coded as unwilling, 30% (N=13) were coded as showing an inability to perform the request, and 23% (N=10) of the librarians' responses were focus off, which served to take the responsibility off the user and librarian.

Table 8

Types of Refusals and Examples

Term/Concept	Transcript Example
Focus Off	"Let me get you the tutors" (ts74)
Ignores request (Positive face threat)	User's face threat: "I am doing an biography on actor Brad Pitt, and I would like to know what age he graduated from high school could you find that info for me?" Librarian's response: "Have you tried looking at his official website." (ts111)
Inability	"I'm working with other patrons now" (ts262); "I'm not an expert on driving so I really can't answer that" (ts75)
Unwilling	"Yes, we do have some titles. A quick way to see what we have is to search the catalog using the subject keywords "Tibetan medicine"." (qp132)

Some refusals by librarians indicated an inability to carry out or act upon the users' requests. In such interactions, librarians cited personal limitations, such as knowledge, as an impediment to answering the query. In other instances librarians cited library policy as part of the inability. Library policy generally stipulates that librarians are to direct students to other sources for homework help and not to answer homework questions. In some instances, librarians were unwilling to perform the users' requests, which were instances that were textually represented as types of redirections to users to find the information themselves. Focus off refusals did not address users' face threats directly, but gently pointed users to other resources for assistance. In other instances, the specific information request or foundations of the users' face threats were ignored by VR librarians. As the example in Table 3 illustrates, a VR librarian could receive a bald on record request, and instead of addressing it with an affirmation or refusal, the librarian asks the user if he or she referenced another information source to address his or her query.

Results for RQ1b

When an initial face threat is refused by a librarian, what is the refusal intensity and what type of face-work is evident in the refusal performed by the librarian?

In response to initial face threats performed by users, VR librarians used different types of refusal messages (See Table 8 above) and different types of refusal intensity (See Table 9). Refusals were found in response to 26% (N=44) of the initial face threats. Refusal intensity was gauged by the type of communication used to indicate that the users' face threats were not likely to be acted on by the VR librarians. For example, low intensity refusals included explanations and presented options for the users to act on to

get answers to queries. Moderate refusals provided suggestions to users and pointed them in other directions to get answers to queries. Low to moderate intensity refusals gave the users some power to choose options that fit their information needs, and are considered more subtle types of intensity. Acute and high intensity refusals provided firm refusals and were not likely to contain options for the users to choose from, and these are considered more overt forms of intensity. Acute refusals provided clear directions and paths to follow to address queries elsewhere, such as a tutoring site. High intensity refusals provided absolute rejection of the possibility of answering the users' queries.

Refusals were received for 26% (N=44) of the users' initial requests. The following section demonstrates the types of refusals issued by librarians and the frequencies of intensity coded for each type of refusal. Of the 48% (N=21) unwilling types of refusals, 5% (N=1) were coded as slight intensity, 19% (N=4) were coded as moderate intensity, 19% (N=4) were coded as acute intensity, and 57% (N=12) were coded as high intensity. Of the 30% (N=13) of the inability to perform the request types of refusals, the librarians' responses were coded as a low intensity 15% (N=2), with moderate intensity in 23% (N=3) of these instances, of acute intensity 15% (N=2), and of high intensity in 46% (N=6) of the refusals. Of the 23% (N= 10) of the initial requests that were responded to by the librarian issuing a focus off response, these were performed with 10% (N=1) low, 10% (N=1) slight, 40% N=4) moderate, 10% (N=1) acute, and 30% (N=3) with high intensity. A two-way contingency table analysis was conducted to identify statistically significant relationships between the types of refusals and refusal intensity and no significant relationships were found, Pearson χ^2 (8, N=44) = 6.85, p =

.55, Eta = .29. Results that did not yield statistically significant findings will be discussed in the Discussion Chapter, which follows this chapter.

Table 9

Intensity Transcript Examples

Term/Concept	Transcript Example
Intensity: Ranges from Low to High	Low: "We're experiencing a busy time right now, thanks for your patience. Would you like to continue to wait, or log on again later when we're not so busy?" (ts98)
	Slight: "Have you checked Worldcat which you should have at your library" (ts94)
	Moderate: "I would suggest you speak with your career guidance office." (qp21)
	Acute: "Let me get you the tutors, they are able to help you understand this kind of problem." (ts74)
	High: "I don't believe I can provide you with any facts for your question." (qp162)

Librarians refused users' initial requests at a frequency of 26% (N=44), and following are the frequencies of a face-work evidenced in these interactions. Of the refusals to users' initial face threats, the absence of face-work was coded in 73% (N=32) of these instances, avoidance was coded in 5% (N=2) of these cases, deference was coded in 21% (N=9) of these interactions and apology was coded in 2% (N=1) of the interactions (See Figure 3). Using a two-way contingency table, the relationship between types of refusals and the face-work performed was assessed and yielded no statistical significance, Pearson χ^2 (6, N=44) = 5.04, p= .54, Cramer's V = .24.

Figure 3

Types of Refusals to Users' Initial Face threats and Related Intensity
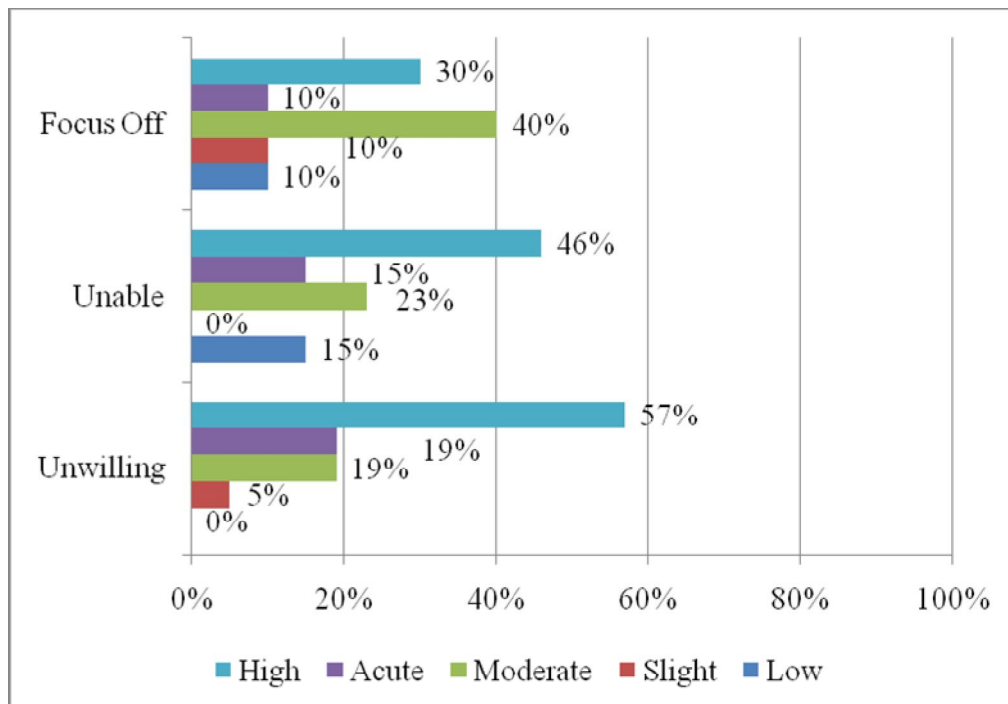
(N=44)

Face-work was largely absent from all interactions; however, some transcripts included deference, avoidance, and apology. Deference is the demonstration of consideration for another in interaction (Goffman, 1956). Avoidance includes the instances in which VR users choose to leave an interaction after a refusal, which takes away the possibility of further contact with a VR librarian. Apology is demonstrating, in text, an apology following any instance for which the user or librarian feels an apology is necessary.

Table 10

Types of Face-work and Examples

Term/Concept	Transcript Example
Avoidance	User may log off to avoid further interaction or leave the interaction abruptly without closing.
Apology	"I'm sorry, I sent this webpage to someone else"
Corrective action	No transcript examples
Deference	"Please wait while I check some sources." (qp436)

Results for RQ1c

When an initial face threat is refused, what types of user responses are evident, including persistence, seeking another target, abandoning the request or complying, and with what intensity are these performed?

Users' initial face threats were refused by VR librarians in 26% (N=44) of the 168 transcripts. When the users' initial requests were met with refusals by librarians, users responded in a variety of ways. Of these interactions that were refused, 50% (N= 22) of the users chose to abandon the request, 41% (N=18) of the users chose to persist, and 2% (N=1) of the users sought another target (See Table 6). Also, 7% (N=3) complied with the librarian to try another route to obtain an answer to their query. After initial face threats are refused, users demonstrated different ways to navigate the refusal. Many users sought to leave the interaction and abandon their requests entirely, which resulted in many abrupt endings. Abrupt endings are identified when either a user or librarian leaves the VR session without any type of closing. Generally, transcripts reveal that individuals depart at some point during the transaction and, in many instances the other participant does not have knowledge that they have departed.

Persistence was often performed by users as a type of rejection to an option that was presented by a VR librarian (See Table 11). In some instances, users complied with

VR librarians' refusals and indicated in text that they would comply and leave the interaction. In some instances, users' would voice the importance or resoluteness in receiving help or information and seek to get their requests passed to other librarians, which is the case when users sought another target.

Table 11

Responses to Refusals

Term/Concept	Transcript Example
Abandoning request	User leaves the VR session, either with or without closing.
Compliance	Okay, thanks (ts 79)
Persistence	VR Librarian: "Here is the Microsoft's Product Support site for Access" User's response: I don not understand this site, I tried it several times before I have never had any success with it." (qp385)
Seeking another target	"can i hav another librarian" (ts75)

After receiving a refusals to initial requests, which occurred with the frequency of 26% (N=44), in 41% (N=18) of these instances users chose to persist to get an answer to their query, and these messages were produced with varying degree of intensity. Of those who were coded as persisting, 67% (N=12) did so with moderate intensity, 13% (N=2) did so with acute intensity, and 20% (N=4) did so with high intensity. In one instance when a librarian refused a user, the user sought another target with high intensity. A two-way contingency table was used to evaluate the relationship between the responses to refusals and the intensity of these responses and no statistical significance was discovered, Pearson χ^2 (2, N=16) = 3.2, p = .20, Cramer's V = .45. Additionally, a two-way contingency table was used to evaluate the frequency of librarian refusals compared

to the frequencies of users' responses to refusals, but no statistical significance was found, Pearson χ^2 (6, N=41) = 6.26, p = .39, Cramer's V = .28.

Results for RQ1d

What is the relationship between the face-work performed by librarians in the process of issuing refusals and the types of responses to refusals that are performed by the users?

A two-way contingency table was used to evaluate the relationship between librarian face-work and the response to refusal strategy performed by users and a statistically significant relationship was found, Pearson χ^2 (9, N=41) = 17.99, p = .035, Cramer's V = .382. A follow up pairwise analysis was conducted to determine difference among the variables of no face-work and persistence and abandoning the request, but no statistical significance was found. What remains is that there is statistical significance in both strategies users utilized in response to refusals (i.e., persistence and abandoning the request) when the librarian performed a refusal without face-work. When users' initial requests were refused by librarians, users demonstrated a variety of responses to the refusals and did so with different face-work strategies. Using a two-way contingency analysis to evaluate the contents of the responses to refusals and associated face-work yielded statistically significant results, Pearson χ^2 (6, N=39) = 35.60, p = .000, Cramer's V = .676. When users gave a response to librarian refusals in the form of persistence, they were more likely to do so without any form of face-work. However, when abandoning the request, users were more likely to avoid further interaction with librarians and ended the sessions either with or without a closing ritual.

Results for RQ1e

What face-work strategies are evident in the users' responses to refusals?

Following from the users' initial face threats that were refused, which were coded in 26% (N=44) of the 168 initial requests, users employed different reactions to the refusals, each with varying uses of face-work. The following section will detail the types of responses to refusals that were coded and related types of face-work enacted by the users. The face-work strategies users exhibited when they responded to librarians' refusals to initial face threats varied, as follows: In the transcripts that were coded as users' persistence, which was 41% (N=18) of the 168 transcripts, 88% (N=16) of those did not demonstrate face-work and 12% (N=2) showed deference. For the single instance in which a user sought another target, face-work was not evidenced. Of the users who abandoned, which occurred in 50% (N= 22) of the 168 transcripts that contained refusals, their requests avoided another interaction with a librarian with a frequency of 75% (N=17) and 25% (N=5) showed deference. Of those who complied with the librarians' refusals, which occurred in 7% (N= 3) of the transcripts, 33% (N=1) did so with avoidance and 67% (N=2) did so with deference. A two-way contingency table was conducted to evaluate whether the form of the users' response to refusals and the corresponding face-work strategies used was statistically significant. The results were statistically significant, Pearson $\chi 2$ (6, N=41) = 38, p = .00, Cramer's V = .68. Follow up pairwise comparisons were conducted to evaluate the difference among these variables and the Holm's sequential Bonferroni method was used to control for Type I error at the .05 level across both comparisons. The pairwise difference of avoidance and abandoning the request and persistence and no face-work were significant.

Results for RQ1f

Is there a relationship between the types of librarian refusals to initial face threat and the users' action to leave the interaction abruptly?

Of the instances in which librarians were unwilling to address the users' queries, which accounted for 48% (N=21) of the refusals, 14% (N=3) of these were met by the user providing a closing, 5% (N=1) were met by the user leaving abruptly when the librarian refusal was subtle (See Table 7), and 38% (N=8) consisted of the users closing abruptly if the librarians' refusal was overt. No cases were found in which to show the user logged off abruptly to show dissatisfaction (See Figure 4). Subtle refusals were those that were of low, slight, or moderate intensity, and overt refusal included those that were performed with acute to high intensity (See Table 12). When the users' initial requests were declined by the librarians coded as showing an inability, which represents 30% (N=13) of the refusals, 46% (N=6) of the users closed, 23% (N=3) of the users left abruptly due to an overt librarian action. The remaining 31% (N=4) of the endings in regard to refusals that were coded as librarian inability were equally represented across the following categories, abruptly ended the session to show dissatisfaction, leaving after getting information, leaving without explanation, leaving abruptly due to waiting.

When a librarian used focus off to refuse the initial request, which occurred were coded in 23% (N=10) of the transcripts, 10% (N=1) of the users in these instances closed, 30% N=3) left abruptly after librarians' subtle action, and 40% (N=4) left abruptly showing that they took the librarians' actions as overt. A two-way contingency table was utilized to learn of the relationship between the types of librarians' refusals that were evident and the types of users' endings that were present and no statistical significance was found, Pearson $\chi2$ (14, N=44) = 21.7, p =.086, Cramer's V = .496. This outcome

suggests that the association between types of librarians' refusals and the types of users'

endings to transcripts is close to having a significant relationship.

Table 12

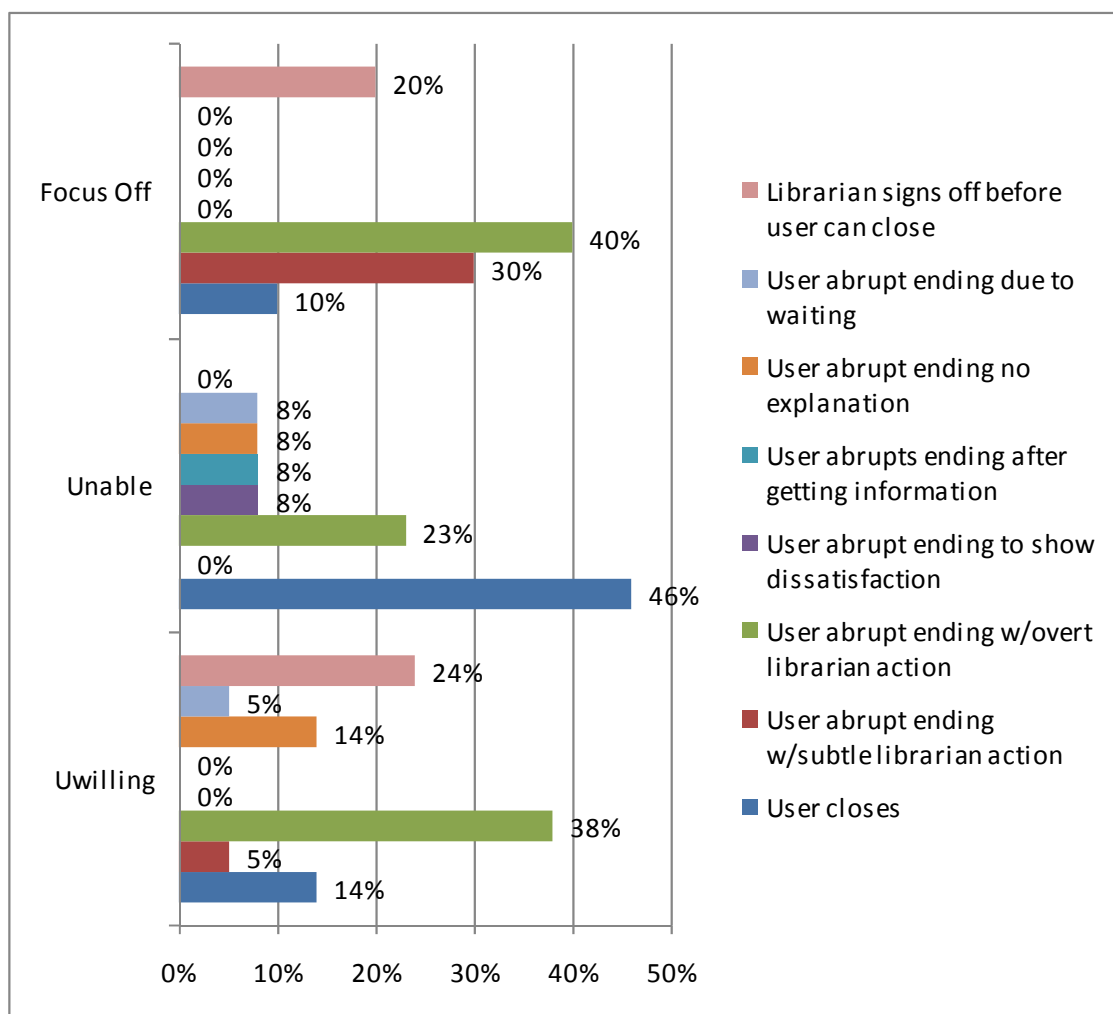*Overt and Subtle Refusals*

Term/Concept	Transcript Example
Overt Refusal	Refusals of acute to high intensity
Subtle Refusal	Refusals of low to moderate intensity

Figure 4

Types of Refusals and Types of Users' Endings

(N=44)

Results for RQ2

What is the frequency of subsequent face threats and by who are they performed? What is the type of face threats performed in the second request, what are the associated face threat orientations, and which interactant performs the second request?

A total of 39% (N=66) of the 168 transcripts contained subsequent face threats, which are also referred to as second requests, which were conducted by both librarians and users. Of these, users performed 63% (N=42) of the second requests and librarians performed 37% (N= 24) of the second requests. Of the second requests made by users, 15% (N=6) of these were executed by users that received an initial refusal from a librarian. The remaining 85% (N=36) of the users that put forth a second request were employed by users who received an affirmative response by VR librarians for initial face threats. From these results, users that put forth a second face threat were much more likely to be those who received some kind of affirmative response from the librarians; conversely, users that received a refusal were less likely to engage in putting forth a second face threat. The following section will provide greater detail about the types of face threats performed by users and librarians, and also supply information on the types of offenses to hearer's and speaker's face that were present in second requests. Although in VR users and librarians communicate textually, the terms "hearers" and "speakers" refer to Politeness Theory and the turns in talk that produce messages back and forth (See Table 13).

Table 13

Offenses to Hearer's and Speakers Face Transcript Examples

Term/Concept	Transcript Example
Offenses to Hearer's Negative Face	"I want to check if book is in that i ordered yet" (ts 015) "what is the french resistance?" (ts 212)
Offenses to Hearer's Positive Face	"thanx but ive seen this 1 befor" (ts030)
Offenses to Speaker's Negative Face	"my little girl is crying..please hurry!" (qp 419)
Offenses to Speaker's Positive Face	"not to be mean or anything, is that all" (ts 132)

Subsequent Face Threats/Second Requests

Second requests could be performed by either users or librarians, and second requests occurred in 39% (N=66) of the transcripts. The second requests are discussed in reference to either the VR librarians or participants making these face threats. Although users are responsible for the all initial face threats, any sequentially next face threat is here referred to as a second request. Although librarians did not conduct any initial face threats, if the second face threat was issued by a librarian, the language here will refer to that face threat as a second request due to its location in the transcript.

In total, of the second requests, which occurred in 39% (N=66) of the transcripts, 78% (N=51) were coded as bald on record, 13% (N=9) were coded as negative politeness, and 9% (N=6) were coded as off record. The face threat orientations for these requests were performed with a threat to hearer's negative face 94% (N=62) and as a threat to hearer's positive face 6% (N=4). Of the 66 second requests, librarians performed 37% (N=24) of these requests, and users performed 63% (N=42) of the second requests. Of the second requests executed by librarians, 83% (N=20) were coded as bald on record, 13% (N=3) were coded as negative politeness, and 4% (N=1) were coded as off record. Of the second requests executed by librarians, which were coded in 37% (N=24) of the

transcripts, 96% (N=23) of the librarians' second requests were coded as a threat to the hearer's negative face and 4% (N=1) were coded as a threat to the hearer's positive face. Using a two-way contingency table, the types of librarian second request types and face threat types were evaluated to identify whether a statistically significant relationship existed between these two variables. Threat to hearer's negative face and bald on record requests were found to be significantly related, Pearson χ^2 (2, N=24) = 7.30, p=.02, Cramer's V = .55. The librarian's second requests were more likely than chance to be in the form of a threat to the hearer's negative face, and impose a request for the hearer to take action.

Users issued 63% (N=42) of 66 second requests and of these requests, 75% N=32) were coded as bald on record, 12% (N=5) were coded as negative politeness, and 12% (N=5) were coded as off record. The face threat orientations of these requests consisted of 93% (N=39) threat to hearer's negative face and 7% (N=3) threat to hearer's positive face. A two-way contingency table analysis was conducted to assess the relationship between the face threat type and face threat orientation of the user's second requests, which produced a non-significant result, Pearson χ^2 (2, N=40) = 1.56, p =.46, Cramer's V = .19.

Results for RQ2a

What types of affirmative and refusal responses to subsequent face threats are made, and by whom?

Second Requests

Librarians conducted a total of 37% (N=24) of the 66 second requests, 75% (N=18) of which received an affirmative response from users, and 25% (N=6) of which

received some form of user refusal. Specifically, in the instances in which a librarian performed the second request and the requests had an affirmative response the by users, which occurred in 75% (N=18) of the transcripts, 61% (N=11) of these requests were met with users' compliance and in 39% (N=7) users agreed to perform the librarians' requests. Of those second requests conducted by librarians and refused by users, which was coded in 25% (N=6) of the transcripts, 50% (N=3) were shown to be unwilling, 33% (N=2) were unable, and 17% (N=1) were focus off.

Of the 63% (N=42) second requests employed by users, 65% (N=27) received some form of librarian refusal and 35% (N=15) received some form of librarian affirmative response. Specifically, of those that received an affirmative response, 36% (N=5) were shown to possess compliance, 37% (N=6) included an agreement to perform the request, and the librarian ignored the request in 26% (N=4) of the instances. Of the refusals issued by librarians (N=27) in response to users' second requests, 54% (N=15) were shown to be unwilling, 23% (N=6) unable, and 23% (N=6) were focus off.

Third Requests

Approximately 12% (N=21) of the 168 transcripts contained a third request, 38% (N=8) of which were carried out by librarians and 62% (N=13) of which were conducted by users. Face threats were coded as third requests if they appear sequentially as the third request in any transcript, regardless of which participant issued the request. Of the eight third requests put forth by librarians, 50% (N= 4) were met by user compliance and 25% (N=2) by users' agreement to perform the request. 25% (N=2) of the users ignored the librarians' third requests. Of the 13 third requests made by users, 33% (N=4) were met with compliance, 22% (N=3) were met with agreement to perform the request, and 45%

(N=6) were ignored by the librarians. Also, the users' third requests were met with unwillingness on the part of the librarians' in 60% (N=7) of the 13 transcripts, inability in 20%, (N=3) and with focus off in 20% (N=3) of the transcripts.

Fourth Requests

In the 168 transcripts, 4% (N=6) of the fourth requests were done by librarians and of those that received an affirmative response by the users, 50% (N=3) were met with compliance and 50% (N=3) were met with agreement to perform the request, and one instance was met by a user refusing the request. This refusal was carried out in such a way that indicated an inability to execute the request. Users included a fourth request in 2% (N=4) of the transcripts and of those instances, 50% (N=2) were met with librarians' ignoring the request, 25% (N=1) indicating a librarian inability to perform the request and 25% (N=1) focus off.

Fifth Requests

One percent (N=2) of the transcripts contained a fifth request. Users conducted fifth requests in two transcripts, and 50% (N=1) of these were met with the librarian ignoring the request and 50% (N=1) were met with the librarian doing focus off.

The frequency of third, fourth, and fifth requests yielded too few cases for more advanced analysis, therefore the remaining results and discussion sections will focus on the initial and second requests.

Results for RQ2b

What types of face threats are associated with subsequent requests that received an affirmative response or a refusal? How do these differ between librarians and users?

In total 39% (N=66) of the transcripts contained second requests, and of this librarian performed 37% (N=24) of them and users performed 63% (N=42) of them. Of the subsequent requests posed by librarians, one was posed off record, which was met with a user's agreement to perform the request. Another request was constructed using negative politeness, which also received an agreement to perform the request by the user (See Table 1 for types of face threats). Of the second requests in which the librarians issued bald on record requests, 69% (N=16) were met with users' compliance and 31% (N=8) were met with users agreeing to perform the request. A two-way contingency table analysis was conducted to evaluate the statistical significance between librarians' types of requests and users willingness to execute them. No statistical significance was found, Pearson χ^2 (2, N=18) = 3.54, p = .17, Cramer's V = .44.

When users put forth the second requests, which occurred in 63% (N=42) of the transcripts, there was one instance in which the request was constituted with negative politeness and this was met by the librarian's agreement to perform the request. When the users' second request was coded as bald on record, which occurred in 75% (N=32) of the transcripts, 38% (N=12) of these received librarian compliance, 31% (N=10) were coded with librarians' agreement to perform the request, and 31% (N=10) were coded as ignored by the librarians. A two-way contingency table analysis was performed to assess the relationship between types of requests and types of librarian affirmative responses and no statistical significance was found, Pearson χ^2 (2, N=14)= 1.94, p = .38, Cramer's V = .372.

Of the second requests issued by VR librarians, which occurred in 37% (N=24) of the transcripts, 25% (N=6) were refused by VR users. Of these requests that were refused

by users, of librarian face threats that were posited with negative politeness, which were done with the frequency of 13% (N=4) of the instances of second requests, 50% (N=2) refused as unwilling, and 50% (N=2) were refused showing inability. Of the librarian second requests that were posed bald on record, which represented 83% (N=20) of the second requests, 50% (N=10) were refused by users as unwilling, 25% (N=5) were shown as inability, and 25% (N=5) were focus off. A two-way contingency table was used to assess the relationship between face threat type and the types of refusal messages the users issued. No statistical significance was found, Pearson χ^2 (2, N=6) = .75, p = .69, Cramer's V = .35.

Users were responsible for the second requests, which accounted for 67% (N=42) of the second requests, and the librarians refused these requests, which occurred in response at a frequency of 63% (N=26). When user requests were coded in the form of off record, 12% (N=5) these face threats received an unwilling response in 60% (N=3) of the instances, and focus off 40% (N=2) of the instances. User second requests in the form of negative politeness received, which occurred with the frequency of 12% (N=5), received an unwilling librarian response in 75% (N=4) of these instances, and as inability in 25% (N= 1) of the instances. When users issued a second request in a bald on record form, which occurred with the frequency of 75% (N=30) of the second requests, of these requests librarians refused these with unwillingness 47% (N= 14) of these cases, with inability in 29% (N=9), and with focus off in 24% (N=7) of these instances. A two-way contingency table analysis was utilized to evaluate the relationship between the types of user second request face threats and the types of refusals the librarians used, and no

statistical significance was identified, Pearson χ^2 (4, N=26) = 3.5, p = .476, Cramer's V = .26.

Results for RQ2c

When refusals are communicated in response to subsequent requests, what is the refusal intensity for each type of face threat and what face-work is performed with refusal messages? How are these different for librarians and users?

Of the users' requests that were off record, which represented 12% (N=5) of the users second requests, 80% (N=4) were refused by VR librarians with high intensity (See Table 9), and 20% (N=1) were refused with moderate intensity. Of the users' requests performed with negative politeness, which occurred with the frequency of 12% (N=5), 75% (N=4) were met with high refusal intensity by librarians and 25% (N=1) by acute intensity. Of the users' second requests that were issued bald on record, which accounted for 75% (N=30) of the second requests, 72% (N=21) were met with high intensity refusals by librarians, and 19% (N=6) were refused with moderate intensity, and 9% (N=3) were the frequency of both slight and acute refusal intensity. When users presented a second request, the type of face threat and the intensity of refusals given by librarians were evaluated using a two-way contingency table to evaluate the relationship between these elements. Results did not return a statistically significant relationship, Pearson χ^2 (6, N=26) = 3.33, p = .76, Eta .15. Of the second requests put forth by users that were refused by librarians using an unwilling response, which represents 54% (N=14) of the responses, the librarians used no face-work in 79% (N=12) of these instances and showed deference in 14% (N=2) of these cases. When librarians' refusals were constructed to show an inability to perform the request, which occurred in 23% (N=6) of the transcripts, of these refusals 67% (N=4) had no evidence of face-work included in the refusal

message, 17% (N=1) included a corrective action, and 16% (N=1) indicated deference toward the user. In total, 73% (N=19) of all librarian refusal messages did not include any evidence of face-work in the form of corrective, deference, avoidance, repair, or apology. A two-way contingency table analysis was used to assess the relationships between librarians' refusals and face-work strategies to the users' second requests, and no significant relationship was indicated, Pearson χ^2 (10, N=26) = 11.9, p = .29, Cramer's V = .49.

In response to librarians' second requests, which occurred with the frequency of 37% (N=24) and refused at a rate of 25% (N=6), the associated refusal messages and face-work put forth on the part of the users showed that no face work was evident for 83% (N=5) of the refusal messages and deference was included in 17% of the refusal messages. Specifically, of the users' responses that indicated an unwillingness to perform a librarian's request, 100% were issued without face-work and also the refusal messages that included an inability to perform the request, and 100% did not contain any face-work strategy. A two way contingency table analysis was conducted to assess the relationship between types of refusal messages made by users and instances of face-work and it yielded statistically significant results, Pearson χ^2 (2, N=6) = 6.0, p = .05, Cramer's V = 1.0.

Results for RQ2d

How do refusals by users or librarians compare to associated refusal intensity and what is the relationship between types of refusals and refusal intensity?

When users issued the second requests, which were 63% (N=42) of the second requests executed, and these were refused by librarians, the frequency of refusals were found in 62% (N=26) of the instances. When refusals occurred with unwilling responses,

which occurred with the frequency of 47% (N= 14), were done with high intensity in

79% (N=11) of the cases, with acute intensity in 14% (N=2) and with moderate intensity

in 7% (N=1) of the cases. A two-way contingency table was used to assess the

relationship between librarians' types of refusal messages and associated intensities, and

no statistical significance was evidenced, Pearson χ^2 (6, N=26) = 11.84, p = .07, Eta =

.32.

When users refused the second requests issued by the librarians, which occurred

with the frequency of 25% (N=6) in the 168 transcripts, the unwilling responses, which

represent 50% (n=3) of the refusals, were formulated with slight intensity in 33% (N=1)

of the cases, and with high intensity in 67% (N=2) of the cases. When users' refusal

messages were in the form of inability, which represent 33% (N=2) of the refusals, these

messages were formulated with moderate intensity in 50% (N=1) of the cases and high

intensity in 50% (N=1) of the cases. 100% of the focus off refusal messages, which

account for 17% (N=1) of the refusal messages made by users in response to a second

request executed by librarians were done with high intensity. A two-way contingency

table analysis was conducted to learn of the strength of relationship between types of

refusals made by users and refusal intensity, but no statistical significance was present,

Pearson χ^2 (4, N=6) = 3.25, p = .52, Eta = .31.

Results for RQ2e

In the second requests, what are the responses to refusals, and by who are they made, and with what intensity are responses to refusals made? What is the relationship between the types of refusals and the types of responses made to the refusals?

Actions following the second face threats made by users in the transcripts for the

cases in which the users' requests were refused by VR librarians, which occurred in 63%

(N=22) of these instances, users' responses to the librarians' refusal messages included persistence in 55% (N=12) of the cases, seeking another target in 5% (N=1), and abandoning the request 37% (N=8), and compliance with the refusal in 4% (N=1) of these instances (See Table 6 for examples of responses to refusals). When users were met with librarians' refusal messages, the librarians refusals in the shape of unwillingness, which accounted for 50% (N=11) of the refusals, were pursued by the users with persistence in 58% (N=6) of these instances and in 42% (N=5) of these cases the users abandoned the request. When librarians' refusal messages demonstrated an inability, which occurred in 23% (N=6) of these instances, users persisted in 40% (N=3) of these cases, sought another target in 20% (N=1), and abandoned the request in a 20% (N=1) and complied with the refusal in 20% (N=1) of these instances. When the librarians' refusal messages were in the form of focus off, which occurred with the frequency of 23% (N=6), in 60% (N=4) of these instances users persisted and in 40% (N=2) users abandoned the request. In total, when librarians issued refusal messages to the users' second request, in 56% (N=15) of these cases the users persisted with the request, in 36% (N=10) they abandoned the request, and in 4% (N=1) of these cases the users sought another target. A two-way contingency table analysis was conducted to evaluate the librarians' refusal messages as compared to the types of users' responses, and no statistical significance was identified, Pearson χ^2 (6, N=22) = 7.53, p =.27, Cramer's V = .41.

When librarians issued the second requests, which took place in 37% (N=24) transcripts, the users' refusals, which occurred with the frequency of 25% (N=6), these were performed in a variety of ways. Of the users' refusals that indicated an

unwillingness to comply, which represent 50% (N=3) of these instances, with the

librarians' request in 67% (N=2) of the instances librarians persisted and in 33% (N=1) of

these instances librarians abandoned the request. When the users' refusals included an

inability to comply with the librarians' requests, which represent 33% (N=2) of the

refusals, in 50% (N=1) of these instances librarians persisted and in 50% (N=1) librarians

abandoned the request. When the refusal message was focus off, which represent 17%

(N=1) of the refusals users made to librarians second requests, this request was

abandoned by the librarian. When librarians put forth the second requests, which were

refused by users, a two-way contingency table was utilized to assess the types of refusal

made by users and the types of responses the librarians issued in reply, but no statistical

significance was indicted, Pearson χ^2 (2, N=6) = 1.33, p = .51, Cramer's V = .47. When

librarian issued the second requests and receive refusal messages from the users,

librarians used varying degrees of intensity in the response to refusal messages, including

moderate to high intensity. A two-way contingency table analysis was used to assess the

levels of intensity as compared to the types of responses to refusals made by librarians,

the results of which did not indicate statistical significance.

Results for RQ2f

In the second requests, what face-work strategies are utilized in response to refusal
messages and affirmative messages?

When users issued the second request, which occurred in 63% (N=42) of the

transcripts, and these were met by a refusal by librarians, which occurred at the rate of

63% (N=22), the users employed a range of responses to these refusals. When users

persisted, which occurred in response to refusal 55% (N=12) of these instances, in 75%

(N=9) of these instances there was no evidence of face-work, and in 8% (N=1) of these

cases repair was evident and in another 8% (N=1) of these cases corrective action was

evident. In the responses in which the users sought another target in response to the

librarians' refusal, which occurred in 4% (N=1) of these instances, 100% of these were

presented without face-work. When users abandoned the request, which occurred with a

frequency of 37% (N=8), 75% (N=6) were performed without any evidence of face-work,

and 12% (N=1) were conducted with avoidance and 12% (N=1) were shown to exhibit

deference. 100% (N=1) of the transcripts in which the users complied with the librarians'

refusals were performed with deference. In total, no face-work was evidenced in 73%

(N=19) of all responses to refusals messages issued by users. A two-way contingency

analysis was carried out to evaluate the relationship between the response to refusal

messages and the face-work evidenced in the form of the response, and statistical

significance was found, Pearson χ^2 (6, N=22) = 19.23, p = .004, Cramer's V = .66. When

second requests were made by users and refused by librarians, users were more likely to

use persistence messages without face-work or abandon requests and use the face-work

strategy of avoidance to prevent further interaction with the librarian, which was carried

out either with or without closing from the VR session.

When librarians issued the second face threats, which occurred in 37% (N=24) of

the transcripts, which were then refused by users, which occurred at a rate of 25% (N=6),

50% (N=3) of the requests were abandoned and 50% (N=3) were pursued by the

librarians in the form of persistence. A two-way contingency table analysis was used to

evaluate the librarians' responses to refusals and the types of face-work evidenced in the

response messages, but no statistical significance was found, Pearson χ^2 (1, N=6) = 3.0, p=.08, Cramer's V = .71.

Results for RQ3

What is the relationship between the types of user initial face threats and the VR librarians' types of transcript endings?

Librarians' choice in how VR sessions ended varied across several categories. In total, librarians ended VR sessions abruptly with or without a closing in 13% (N=23) of the transcripts, librarians closed in 42% (N=70) transcripts, librarians left abruptly with an explanation in 6% (N=10) of the sessions, the librarians ended VR sessions without closing in 39% (N=65) transcripts. Types of initial face threats are discussed above under RQ1. A two-way contingency table analysis was conducted to assess the relationship between types of initial face threats put forth by users and librarians' choices in closing, but no statistical significance was found, Pearson χ^2 (6, N=167) = 3.36, p = .76, Cramer's V = .10.

Results for RQ3a

What is the relationship between librarian refusals for initial requests and the types of user endings?

Following are the types and frequencies of users' endings to interactions with librarians in the 168 transcripts: 34% (N=58) of the users left abruptly after overt librarian action, 23% (N=39) users closed, 16% (N=27) of the transcripts found that librarians closed the session before the users could include a closing ritual. In addition, 9% (N=15) users left abruptly after subtle librarian action, 9% (N=15) of the users left abruptly the interaction without explanation, 4% (N=7) of the users left abruptly due to

waiting, 2% (N=3) s left the VR sessions abruptly to show dissatisfaction, and 2% (N=3) of the users left without closing after receiving information.

In comparing the various ways in which the users ended the VR sessions to the types of refusal messages issued by the librarians, the following frequencies were identified. When a librarian refused an initial request with an unwilling response, which occurred in 48% (N=21) of the transcripts, the users ended the sessions as follows: 38% (N=8) of the users left abruptly after overt librarian action, 24% (N=5) of the transcripts showed that librarians closed before the user could close, 14% (N=3) of the users closed, 14% (N=3) of the uses left abruptly without explanation, 5% (N=1) left abruptly after waiting, and 5% (N=1) left abruptly after subtle librarian action. The users' endings associated with a librarian issuing a refusal to the initial face threat showing an inability to perform the request, which occurred in 30% (N=13) of the transcripts, were as follows: 46% (N=6) of the users closed, 23% (N=3) left abruptly after overt librarian action, 8% (N=1) left abruptly to show dissatisfaction, 8% abruptly after getting information, 8% (N=1) left abruptly without explanation, 8% (N=1) left abruptly due to waiting (See Figure 4 above). When the librarian refuses the initial face threat with a focus off refusal, which occurred in 23% (N=10) of the transcripts, 40% (N=4) of the sessions included users leaving abruptly after overt librarian action, 30% (N=3) included users leaving abruptly after subtle librarian action, 20% (N=2) of the transcripts indicated that librarians closed before the users could close, and 10% (N=1) included the users closing. A two-way contingency table analysis was used to assess to calculate whether the types of users' endings were closely associated with the types of librarian refusals to the initial face threats. No statistical significance was indicated, Pearson χ^2 (14, N=44) = 21.66, p =

.09, Cramer's V = .50. The types of face-work put forth by librarians in response to the

initial face threats was evaluated using a two-way contingency table analysis, and no

statistical significance was found, Pearson χ^2 (21 (n=44) = 15.81, p = .78, Cramer's V =

.35.

Results for RQ3b

In subsequent requests by users, what is the relationship between librarian refusals
and users' choices in endings?

In total, 63% (N=26) of the users' second face threats were refused by librarians,

of these refusals 54% (N=14) included librarians indicating an unwillingness to perform

the request, and these were associated with the following user endings: 43% (N=6) of the

users left abruptly after subtle librarian action, 29% (N=4) of the transcripts found that

the librarian closed before the users could close, 21% (N=3) of the users closed, and 7%

(N=1) of the users left abruptly to show dissatisfaction. Other refusals included 23%

(N=6) that were executed were coded as showing librarians' inability to perform requests,

and of these 67% (N=4) of the users closed, and in 33% (N=2) of the transcripts the

librarians closed before the user could close. Six transcripts, 23%, included a focus off

form of refusal from librarians, and of these 67% (N=4) of the users closed, 17% (N=1)

of the users left abruptly after overt librarian action, and in 16% (N=1) of these instances

found that the librarians closed the sessions before the users could issue a closing. A two-

way contingency table test was utilized to analyze the relationships between librarians'

refusal messages and types of user endings, and no statistical significance was found,

Pearson χ^2 (6, N=26) = 7.49, p = .28, Cramer's V = .38.

Results for RQ4

With what frequency do librarians perform a salient group identity or salient personal identity (Lea & Spears, 1992)? How does salient identity play a role in the instances of refusal or agreement to perform requests, and in the frequency and types of users' messages containing friction?

Several transcripts (N=4) are not included in the frequency of salient librarian identity since users ended these four sessions before the librarians could interact with them. Of the remaining 164 transcripts, the frequency of transcripts coded as salient group identity for librarians was 74% (N=121) of the transcripts, while a salient personal identity was found in 26% (N=43) of the transcripts. Of the 164 transcripts, 70% (N=115) of the users' initial face threats were met with affirmative or neutral responses from librarians. Of these responses, 77% (N=89) were formed with the librarians putting forth a salient group identity, and 23% (N=26) included librarians putting forth a personal identity. Of those transcripts that included a librarian asserting a salient group identity (N=121), 69% (N=84) of the users' initial face threats were met with agreement to perform the request, 30% (N=36) received compliance messages, and 1% (N=1) included the librarian ignoring the request. For those transcripts that included a salient personal identity (N=43) for the librarians, 82% (N=35) of the users' initial face threats received agreement to perform the request, 11% (N=5) received a compliance message, and 7% (N=3) were ignored by librarians. A two-way contingency table analysis was used to evaluate librarians' salient identity and the types of responses issued in response to the users' initial face threats, and statistical significance was identified, Pearson χ^2 (2, N=118) = 6.51, p = .04, Cramer's V = .23.

Figure 5

Salient Librarian Identity and Types of Affirmative Responses to Initial Face threats
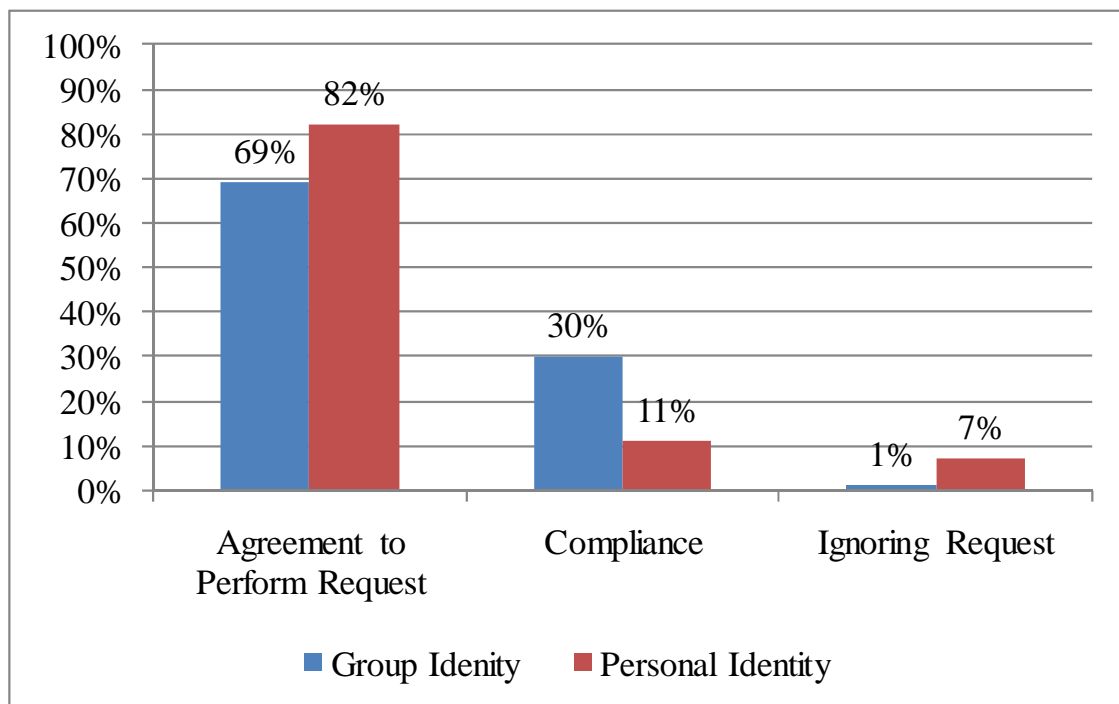
(N=119)

The frequencies of salient librarian identity and refusals to initial face threats were also assessed. Users' initial face threats were refused in 26% (N=44) of the transcripts in which librarians put forth a salient personal identity, which included 34% (N=15) of the transcripts that had refusals to users' initial face threats, 47% (N=7) were refused using a response that indicated an inability to perform the request, 33% (N=5) were unwilling messages, and 20% (N=3) were focus off. The remaining 66% (N=29) of the transcripts included librarians who put forth a salient group identity, and the frequency of types of refusal messages to users' initial face threats included an unwillingness in 55% (N=16) of the transcripts, focus off in 24% (N=7), and a message showing inability in 21% (N=6) of the transcripts. A two-way contingency table analysis was used to assess the relationship

between librarians' identities and types of refusal messages, but no statistical significance was found, Pearson χ^2 (2, N=44) = .3.32, p = .19, Cramer's V = .28.

Figure 6

Salient Librarian Identity and Types of Refusals to Initial Face Threats
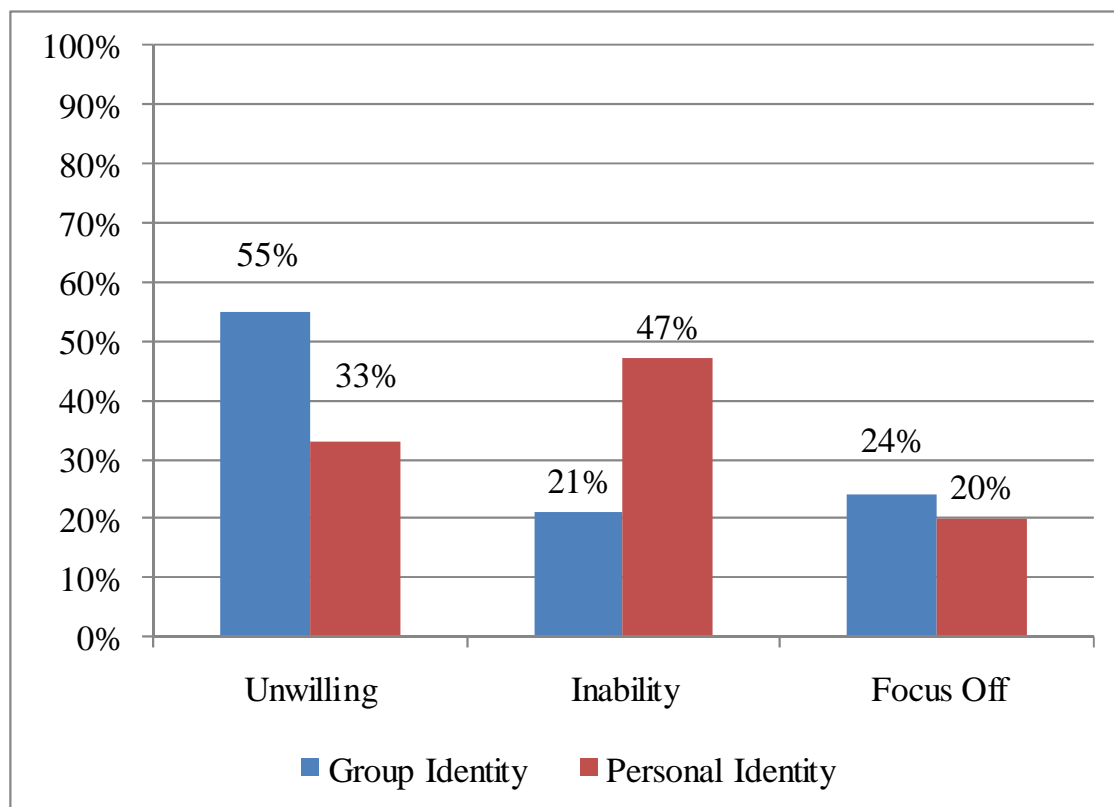
(N=44)

Second face threats employed by users were also assessed using two-way contingency table analyses to determine the strength of the relationships between librarians' refusals and affirmative responses and the types of salient librarian identities that were asserted. Second requests were found in 63% (N=42) of the transcripts, which represent 25% of the VR transcripts. Users' second requests were refused in 63% (N=26) of the second requests. No statistical significance was found in the comparison of librarians' salient identity and the frequencies of various refusals, Pearson χ^2 (2, N=26) =

.47, p = .79, Cramer's V = .13. A two-way contingency table analysis was also used to determine the relationship between librarians' salient identities and types of agreement for second requests issued by users, and no statistical significance was evidenced, Pearson χ^2 (2, N=14) = .53, p = .77, Cramer's V = .19.

Of the 164 transcripts that could be coded for librarian identity, librarians put forth a salient group identity (N=121) or a salient personal identity (N=43), and both types of identities were compared to the total number of instances of friction put forth by users. The population of transcripts coded for librarian identity include 98% (N = 164) of the transcripts. Transcripts in which a salient personal identity was put forth by librarians, which included 26% (N=43) and transcripts in which librarians put forth a salient group identity included 74% (N=121), and these were assessed by the frequency with which users produced communication containing friction. A two-way contingency table analysis was used to evaluate the relationship between librarians' salient identity and the frequency of users' friction, but no statistical significance was found, Pearson χ^2 (5, N=164) = 9.12, p=.10, Cramer's V = .24.

Results for RQ4a

What is the relationship between salient librarian identity and types of users' transcript endings?

A two-way contingency table analysis was used to evaluate librarian identity and the types ways in which users ended the VR sessions, but no statistically significant findings were present, Pearson's χ^2 (7, N= 164) = 7.16, p = .41, Cramer's V = .21.

Results for RQ5

How is user anonymity and identity managed in interaction? How often do users remain completely anonymous or provide information that would contribute to becoming identifiable, or fully disclose identity?

Users remained completely anonymous in 38% (N=64) of the 168 transcripts, in 37% (N=62) of the transcripts the users were identifiable, in 23% (N=39) of the transcripts the users were identified, and in 2% (N=3) of the transcripts the users were known. When the users' identities became identifiable or when users self-identified, these actions were carried out by the user initiating the process in 98% (N=99) of the transcripts, and the librarians requested information that led to the users' ability to become identified in 2% (N=2) of the interactions.

Results for RQ5a

What is the relationship between users' identity and friction?

The different user identities, ranging from fully anonymous to fully known, were assessed to learn of the relationship between these representations and the frequencies of friction. Using a two-way contingency table, user identity and friction frequency were analyzed. The relationship was not found to be statistically significant, Pearson χ^2 (15, N=168) = 7.9, p = .93, Cramer's V = .12.

Results for RQ6

What is the relationship between the frequency of the instances of friction between librarians and users? With what frequency is friction instigated by librarians or users in the initial and subsequent instances of friction?

Correlation coefficients were computed among the two friction frequency scales for users and librarians. Using the Bonferroni approach to control for Type I error across the 10 correlations, a p valued of less than .005 (.05 = .01) was required for significance.

The results of the correlational analysis show that the correlation was statistically significant. The results suggest that if an interactant uses increasingly more instances of friction, the others' instances of friction will also increase.

Results for RQ6a

What are the types and frequencies of friction produced by users and librarians?

Users were responsible for 46% (N=78) and librarians for 54% (N=90). Of these initial acts of friction the following provides the frequency of different types of friction displayed by users: 69% (N=54) included the users' discourteous disconnections (leaving abruptly), 21% (N=16) including an act of rudeness, 4% (N=3) goofing off and 4% (N=3) issuing a reprimand in the form of disapproval. The following presents the frequency of the displays of the librarians' initial types of friction: 56% (N=50) included redirecting users rather than offering to address queries, 12% (N=11) included reprimands in the shape of disapprovals, 7% (N=6) included discourteous disconnects, 4% (N=4) rudeness, 4% (N=4) librarians showing a lack of knowledge, 4% (N=4) ignoring the users' query, 3% (N=3) librarians kept the users waiting, 2% (N=2) included insults or condescending communication, 2% (N=2) included a reprimand to a direct insult, and librarians issued reprimands to users' goofing off, limited time, or "other" each in 1% (N=1) of the transcripts. Types of friction initiated by librarians or users differed. The association between the instigation of friction and the production of additional types of friction is what was found to have a positive association. A two-way contingency table analysis was conducted to evaluate the users' and librarians' instances of friction, and statistical significance was evidenced, Pearson χ^2 (13, N=168) = 1.2, p = .00, Cramer's V = .85.

Second instances of friction occurred in 42% (N=70) of the transcripts. Of these instances of friction, users displayed 40% (N=28) and librarians displayed 60% (N=42) of the actions associated with friction. Users included friction in the form a discourteous disconnect (leaving abruptly without closing) in 50% (N=14) of the VR sessions, demonstrated rudeness in 21% (N=6) of the transcripts, and were insulting in 11% (N=3), issued a reprimand in response to a perceived insult in 4% (N=1) of the interactions, 7% (N=2) included reprimands or disapproval messages, and 7% (N=2) of the users displayed friction in the form of goofing off. When librarians displayed a second instance of friction, the following frequencies were found: 31% (N=13) contained a discourteous sign off, 24% (N=10) redirected the users to other means for answering questions, 7% (N=3) ignored the users' request, 7% (N=3) were "other," which included limiting time, 7% (N=3) included rudeness, 5% (N=2) included a reprimand to a perceived insult, 5% (N=2) included a reprimand to a direct insult, 5% (N=2) included a reprimand to a users' goofing off, 5% (N=2) included the librarians' not demonstrating knowledge or showing little effort to help the user, in 2% (N=1) of the instances librarians put forth a reprimand in the shape of a defensive message, and in 2% (N=1) of these types of friction the librarians' kept the users waiting without explanation or apology. A two-way contingency table analysis was utilized to assess the relationship between users' and librarians' types of friction and statistically significant results were found, Pearson χ^2 (12, N=70) = 28.02, p = .00, Cramer's V = .63.

Results for RQ6b

What is the relationship between librarians initiating friction and users leaving the VR sessions?

Using a two-way contingency table analysis to evaluate the relationship between librarians' initiating friction in the VR sessions, the relationship between the type of friction used and its impact on how users leave the VR session was evaluated. Statistically significant results were found, Pearson χ^2 (84, N=90) = 1.23, p = .00, Cramer's V = .44.

Results for RQ6c

What is the relationship between the instigation and type of friction used by librarians and librarian identity?

VR Librarians initiated friction in 54% (N=90) of the transcripts and a two-way contingency table analysis was conducted to assess the interaction between salient librarian identities and types of friction produced. No statistical significance was identified, Pearson χ^2 (12, N= 90) = 16.79, p = .16, Cramer's V = .43.

Results for RQ6d

What is the relationship between the instigation and type of friction and total number of instances of friction performed and the users' degree of anonymity?

The relationship between the types of users' identity and anonymity was compared to the types of friction put forth initially by users. A two-way contingency table analysis was used to assess the strength of relationship between these variables, but no statistical significance was identified, Pearson χ^2 (10, N=78) = .11.82, p = .30, Cramer's V = .28. A two-way contingency table was used to evaluate the relationship between users' identity and the number of occurrences of messages that contained

friction, but statistical significance was not present, Pearson χ^2 (15, N=168) = 7.8, p = .93, Eta = .09.

Summary of Results

The Results Chapter included frequencies and statistical findings, some of which were significant and some of which did not produce statistical significance. Table 14 provides a summary of the outcomes associated for each research question, and in the following Discussion chapter major findings, non-significant results, and other additional insights will be explored.

Table 14

Summary of Research Questions and Outcomes

RQ	Question	Outcome
RQ1	What are the types of initial face threats made by users to VR librarians, which includes off record, baldly; positive politeness, or negative politeness (Brown & Levinson, 1987) and face threat orientations in VR?	Frequencies
RQ1a	To what extent are the initial face threats met with some form of agreement and what types of agreement are performed or met with refusal and what types of refusal are evident?	Frequencies
RQ1b	When an initial face threat is refused by a librarian, what is the refusal intensity and what type of face-work is evident in the refusal performed by the librarian?	Non-significant for librarian and users
RQ1c	When an initial face threat is refused, what types of user responses are evident, including persistence, seeking another target, abandoning the request or complying, and with what intensity are these performed?	Non-significant
RQ1d	What is the relationship between the face-work performed by librarians in the process of issuing refusals and the types of responses to refusals that are performed by the users?	Statistically significant for librarians and users
RQ1e	What face-work strategies are evident in the users' responses to refusals?	Statistically significant
RQ1f	Is there a relationship between the types of librarian refusals to initial face threat and the users' action to leave the interaction abruptly?	Non-significant
RQ2	What is the frequency of subsequent face threats and by whom are they performed? What is the type of face threats performed in the second request, what are the associated face threat orientations, and which interactant performs the second request?	Statistically significant for librarians; non-significant for users
RQ2a	What types of affirmative and refusal responses to subsequent face threats are made, and by whom?	Frequencies
RQ2b	What types of face threats are associated with subsequent requests that received an affirmative response or a refusal? How do these differ between librarians and users?	Non-significant for librarians and users
RQ2c	When refusals are communicated in response to subsequent requests, what is the refusal intensity for each type of face threat and what face-work is performed with refusal messages? How are these different for librarians and users?	Non-significant for librarians and users
RQ2d	How do refusals by users or librarians compare to associated refusal intensity and what is the relationship between types of refusals and refusal intensity?	Non-significant

RQ	Question	Outcome
RQ2e	In the second requests, what are the responses to refusals, and by whom are they made, and with what intensity are responses to refusals made? What is the relationship between the types of refusals and the types of responses made to the refusals?	Non-significant for librarians and users
RQ2f	In the second requests, what face-work strategies are utilized in response to refusal messages and affirmative messages? What is the relationship between users' second requests and face-work for librarians' second requests and face-work?	Statistically significant for users; non-significant for librarians
RQ3	What is the relationship between the types of user initial face threats and the VR librarians' types of transcript endings?	Non-significant
RQ3a	What is the relationship between librarian refusals for initial requests and the types of user endings?	Non-significant
RQ3b	In subsequent requests by users, what is the relationship between librarian refusals and users' choices in endings?	Non-significant
RQ4	With what frequency do librarians perform a salient group identity or salient personal identity (Lea & Spears, 1992)? How does salient identity play a role in the instances of refusal or agreement to perform requests, and in the frequency and types of users' messages containing friction?	Statistically significant
RQ4a	What is the relationship between salient librarian identity and types of users' transcript endings?	Non-significant
RQ5	How is user anonymity and identity managed in interaction? How often do users remain completely anonymous or provide information that would contribute to becoming identifiable, or fully disclose identity?	Frequencies
RQ5a	What is the relationship between users' identity and friction?	Non-significant
R6	What is the relationship between the frequency of the instances of friction between librarians and users? With what frequency is friction instigated by librarians or users in the initial and subsequent instances of it?	Statistically significant
R6a	What are the types and frequencies of friction produced by users and librarians?	Statistically significant
R6b	What is the relationship between librarians initiating friction and users leaving the VR sessions?	Statistically significant
R6c	What is the relationship between the instigation and type of friction used by librarians and librarian identity?	Non-significant
R6d	What is the relationship between the instigation and type of friction and total number of instances of friction performed and the users' degree of anonymity?	Non-significant

CHAPTER SIX

Discussion

This chapter explicates specific findings from the results chapter and provides supporting information for additional insights. The body of transcripts for this research was selected based on a baseline of negative interactions that were first derived from coding utilizing the RRCS, and further data reduction to distill transcripts that contain friction. This process produced 23% (N=168) transcripts from the original population of 746 transcripts. The transcripts for this research need to be viewed for their own contents, and are found to be generalizable to the population of other chat reference interactions in which interactants encounter some form of friction and to other types of electronic service encounters. It is important to mention again that the transcripts for this study come from a larger body of transcripts, which included 746 transcripts. Of this population of transcripts 168 (23%) contained friction. The other 77% of the transcripts were not identified as containing friction. The following findings are for only the transcripts used in this analysis, which contain friction, and are not generalizable to other transcripts that do not contain friction. Further, the analysis and findings presented here are not generalizable to CMC service interactions as a whole, but perhaps only to interactions that contain elements of friction. The transcripts used for this research arrived in the population because they contained instances of friction, which was defined as any element that impeded the progression of the query negotiation between users and VR librarians. As will be discussed below, initial instances of friction breed increasing amounts of friction. The following major findings will be highlighted in this chapter:

Major Findings

1. Overall, VR transcripts that contain friction demonstrate a lack of face-work for librarians and users.

2. The high frequency of librarians' unwilling responses to users' initial face threat likely indicates that librarians employ decision making when evaluating which users' queries to address.

3. Users' responses to refusals often included leaving the VR session abruptly without closing.

4. VR transcripts that contain friction are frequently found not to contain elements associated with Politeness theory, such as positive and negative politeness when making requests.

5. Impacts of librarian identity on affirmative responses to address users' face threats and refusals to users' face threats differ between salient group or salient personal identity presented

6. Friction produced by librarians and users is found to increase together, regardless of which interactant initiated the friction.

1. Overall, interactions between librarians and users were found to lack face-work

Overwhelmingly, both users and VR librarians performed face threats and refusals without face-work. Positive politeness to demonstrate liking for one another and also negative politeness to demonstrate a concern for inconveniencing the other were also largely absent from these CMC interactions. In response to refusal messages made by users, face-work was found to be statistically significant. Of the responses to refusals that

were in the form of persistence, the users did not construct messages that showed instances of face-work. Additionally, when librarians posed the second face threats in the VR transcripts and the users refused them, the users did not use face-work in their responses, this association was found to be statistically significant. Specifically, when users refused these face threats by using an unwilling response, these messages did not contain elements of face-work, such as apology, or deference.

Although librarians' refusals to users' initial queries were made without face-work strategies in the majority of the communication, such behavior did not impact the users' endings to these transactions. The methods in which librarians refused users' requests, including unwillingness, inability, and focus off, all seemed to lead to the users' closing with similar amounts of frequency. Although many users left the VR sessions after librarians' refusals, there was not a specific type of rejection that was shown to influence the users to leave the sessions.

Face-work was also a component analyzed in the refusal messages. Face-work was not identified as part of any type of refusal messages for librarians or for users, and this result was found to be statistically significant. Deference, on the part of the users, was found in only 16% (N=7) of the refusal messages issued to librarians. The lack of face-work indicates that the users possess a low concern for their face or the face of the librarians in interaction, although a precise rationale for the lack of users' face-work is not obvious. Additionally, no significant findings were produced from the analysis of instances of face-work in relation to any form of users' anonymity or known identity. This indicates that even if a user is known they are not more likely to perform face-work, nor was anonymity associated with a greater frequency of a lack of face-work. From

these results, the lack of positive politeness also indicates that users are not concerned with being liked or approved of. Furthermore, they are not concerned with showing that librarians' goals are shared, although users' may not be aware that librarians have goals. Although Brown and Levinson (1987) assert that "any rational agent" (p. 68) will utilize strategies to minimize threats to face, it does not appear that the interactions in this variety of CMC service interactions uphold this central theme. Perhaps a rational agent in CMC communication involves different connotations for interaction and the inclusion of politeness.

According to Meyer (2002), negative face-work should rise when hearer's status increases and intimacy decreases with the speaker and also when the degree of imposition increases. Here, though, it is not clear who is viewed as possessing a higher status in VR interactions. For example, users may view librarians as possessing higher status since they have access to information. On the other hand, VR librarians see the users as "patrons" or "clients," which means it is the librarians' professional obligation to provide them with information.

As Ziefle, Schroeder, Strank and Michel (2007) indicate, smart technology and other forms of electronic forms of communication are changing the ways we communicate. The findings from this research indicate that with these forms of communication a new, shorter, to the point, concise form of communication is evolving. The form of communication studied in this research indicated that users and librarian did not take the space in the typed messages to include politeness or face-work, which may be becoming a ubiquitous type of content. For example some electronic forms of interaction, such as IM, SMS, and Twitter, possess constraints on the amount of

information that can be communicated. This leads to highly targeted messages. It is clear that the majority of the initial face threats and subsequent face threats put forth by users and librarians did not contain elements of face-work. This included a lack of concern for one's own face or the face of the other, and a lack of elements that demonstrated concern for the hearer's positive or negative face. It may be that case that the transcripts that were selected for this research, which all contain some type of friction, show a lack of concern for face and politeness and this leads to problems in the interactions. However, it may be the case that other transcripts, beyond this sample, may or may not demonstrate that the interactants are concerned about face-work or politeness. This leads to a question as to whether or not the transcripts used for the purpose of this research contain friction at a higher rate due to a lack of face-work or politeness, or if CMC interactions for service encounters may generally lack these elements.

Literature that utilizes the concept of face-work in the process of analysis of CMC interactions is not well represented in the literature, and the findings of this research underscore the importance of further study. As technology changes and interactions become increasingly mediated, the shift in how interpersonal or professional communication takes place may herald a new era of face-work. The lack of face-work that is evidenced in these findings may illustrate the shifting norms of CMC interaction, where value is not placed on such relationally-oriented elements, but rather on the receipt of information. Face-work is a social construction that is created in interaction and performed to present a desired self-image in any interaction (Goffman, 1967). In CMC perhaps the desired self presented is evolving in a different direction and departing from

the norms of FtF interaction. The findings from this research, at least, support this assertion.

2. The frequency of librarians' unwillingness to carry out users' requests

Of the initial face threats, 26% (N=44) were refused by librarians, most of which demonstrated an unwillingness to carry out the users' requests. The difference between an unwilling refusal and an inability to address the request is crucial. An unwilling refusal indicates that the face threat has the possibility of being addressed, but will not be attended to by a librarian due to a choice he or she is making at the time. In contrast, an inability refusal indicates that the librarian lacks information, authority, or other resources to process the face threat. Unwilling refusals to users' initial face threats represented 48% (N=21) of the initial face threats in the 168 transcripts and did not return a statistically significant finding. This finding needs to be further explored to better understand what elements of users' requests impact the librarians' decision making process. As noted above, most initial face threats put forth by users were devoid of face-work, which indicates that the lack of face-work is not the cause of librarian refusals, although there was no significant association between the lack of face-work and refusals.

According to Wellman (2004), interactions in one medium are likely to include patterns of interaction across environments. In reference to the findings from this research, it would then follow that the librarians would exert similar amounts of control when handling face threats in person, over the telephone, or via email, and that a librarians' willingness to address users' face threats would also be similar. Although this is a possible scenario, another possible explanation for the frequency with which

librarians made choices not to help users in the CMC interactions is that in this medium librarians are enacting a type of social transformation (Montero & Stokols, 2003). This transformation could allow interactants to present a different side of themselves during VR reference than in FtF reference. Amaral and Monteiro (2002) also proposed that CMC could enable a new type of identity, which is a variation of an individual's FtF identity, which may explain differences in behaviors in CMC interaction as compared to FtF reference. The findings from this research suggest that FtF reference may differ from VR reference in the rate at which librarians choose not to answer users' queries, although further research on positive interactions may yield additional insights.

Although previously new media may not have been thought about as a completely separate form of communication (Rice & Williams, 1984), perhaps the range of choices of responses that are afforded in CMC interaction will alter this perception. This research hints at the possibility that this medium gives interactants wider varieties of behaviors to choose from and act on. As Wright (2004) indicated, CMC gives individuals greater control over message creation and also control over relational content. The findings from this research, which examined only transcripts that contained friction, support this notion in that librarians, with great frequency, choose not to respond to users' queries. In the content of these responses, there is little to support that there is a concern for the relational aspects of the interactions. Clearly, from the lack of face-work, especially in regard to the relative nonexistence of apology, librarians did not appear concerned for the users when face threats were refused. Perhaps this low concern is due to the medium of interaction, perhaps other factors are a work that may better explain this phenomenon.

<u>3. Types of users' responses to refusals were associated with leaving VR sessions</u>
<u>abruptly.</u>

When initial face threats were refused by librarians, most often users chose to leave the VR sessions, often without a closing ritual. Although more than 41% of the users whose initial face threats were refused chose to persist to get their queries answered, it is unclear what triggered users to make such a choice. Such personal decisions to either abandon a request or persist needs to be assessed to determine specific actions or communication elements that influence such choices. Since these service encounters are free of charge and the value and necessity of getting information is not known, it is not clear how important the transactions are to VR users. Librarians made decisions as to which VR interactions they were going to address, which resulted in the frequency of 26% for refusals to users' initial face threats, and users made their own decisions regarding how to react. As findings indicate, the majority of users chose to persist to get their queries answered, while the second choice of users was to abandon the request and leave the interaction.

Literature points to ways in which CMC and FtF communication are similar and share many of the same benefits of communication (Arnold, 2002). A key component of VR is that it is convenient to use, and gives users access to librarians without having to go to a brick library. Perhaps rejections of users' requests happens more in chat reference than in FtF reference, since the librarians could view such a turn down as not inconveniencing the users significantly. Users' initial face threats were refused by librarians at a rate of 26% (N=44), and stemming from this the users persisted at a rate of 49% (N=22) and abandoned the requests 41% (N=18) of the time. These are roughly

similar quantities of response and it would be insightful to learn of the frequencies of these responses in FtF reference to find out how similar they are to the interactions in CMC. When an individual physically goes to a brick library to ask a reference librarian to address a query, this process is less convenient than turning to a computer to carry out the interaction (Radford & Connaway, 2010). Perhaps librarians invest more time and effort into FtF reference than CMC reference since they recognize the effort users exert to making a physical presence. In FtF reference, librarians may find it more difficult to refuse users' requests. Similarly, when faced with a refusal in a FtF instance of reference, after taking the time to go to a physical library, the users may be less likely to quietly leave, or abandon the request, and more likely to pursue their interests with greater intensity.

As previously stated, VR interactions reveal that users pursued answers to their queries at a higher frequency than abandoning their requests; however, elements of face-work and politeness were largely absent. When individuals receive rejection to questions they are invested in, Politeness Theory indicates that this would be a greater threat to the hearer's negative face and threat to speaker's positive face. Following from this, in persistence messages, there should be a greater amount of politeness and concern for users being liked and a concern for imposing on librarians' time. The findings do not support this. Users' persistence responses to refusals were overwhelmingly void of concern for their own face or the face of the librarians. As found in Shavelsky (2006) culture plays a large role in the concern for face in interaction, and although the sample for this dissertation comes from a random international sample of VR interactions, the

demographic information, such as race or ethnicity, is not available to provide greater insights.

4. Politeness Theory and CMC: Insights from transcripts that contain friction.

Politeness theory guided the coding of face threats for both users and librarians. The majority of the transcripts contained bald on record requests from both parties.

The following section discusses the use of Politeness Theory and the findings from the distilled set of transcripts containing friction that were identified from a larger portion of randomly collected transcripts. The VR service encounters that contained some form of friction started with bald on record requests occurred in over 88% (N=145) of the 168 transcripts. Service encounters, as a type of interaction, may contain different elements than other types of transactions that produce face threats. Further, electronic service encounters may be increasingly different, as well. Perhaps electronic service encounters, such as VR reference, as an approach employed to get information is similar to approaching a bank counter to make a transaction and stating a purpose to a bank teller. Users came to the VR sessions with a question and asked them in a very direct manner, a process that is prompted by the VR interface that instructs users to type their queries into a text box. Initial face threats performed by users largely lacked positive or negative face-work, which underscores the transaction that is perhaps more about the information exchange than a relational interaction. In transactions in which interactants are interested in maintaining positive relationships, impressions, and a desire not to overly impose on the other, it would be more likely to find instances of face-work and greater content related to politeness. According to Goffman (1967), every interaction contains elements related to maintaining a positive exchange, which is part of a mutual

contract of interpersonal dealings. However, in the cases of VR interactions, the lack of
concern for one's own face and the face of the other may point toward a different
connotation associated with electronic service encounters, one that is less concerned with
politeness in the transaction. Although users logged onto the VR sessions and posed bald
on record face threats the majority of the time, VR librarians also were more likely to
perform requests bald on record. In second requests made by librarians to users 83% of
these face threats were executed bald on record and such requests place the onus on the
users to perform some kind of activity. This finding indicates that in the transcripts that
formed the corpus for this research, both users and librarians constructed bald on record
face threats for the majority of the requests.

When initial face threats were refused by librarians, the majority of the refusal
communication did not contain any face-work. The absence of apologies, deference, or
avoidance indicates a low or nonexistent desire to maintain one's own face or the face of
the other in this form of electronic service interactions. Goffman (1967) constructed the
notion that in interaction each individual puts forth a desired self. Given the lines in
interaction found in the VR transcripts, both requests and refusals were produced without
concern for face-work. Although a working consensus (Goffman, 1959) was
demonstrated in that most face threats were addressed in some fashion, absent was the
showing of concern for the other, the offer through communication to preserve the others'
face. Politeness theory (Brown & Levinson, 1987) asserts that additional requests are
likely to impose increasingly on the other, which follows that subsequent face threats
issued by either the librarian or users would be likely to contain a greater instance of
negative and/or positive face-work. Face-work requires management of one's own action

and careful monitoring of another's face and actions. Instead the deficiency of face-work is what was found with the greatest frequency in the VR transcripts that contained some form of friction.

When users' initial face threats were refused by librarians, close to 50% of the users chose to abandon requests. Since over 70% of the refusals conducted by the librarians were found to be without face-work, which is without apology or deference, perhaps the lack of this type of personal concern impacted the users' choice to leave the sessions. Although this research did not have access to the users' thought processes, their behavior in the context of refusals indicates that such rejection may influence the user to withdrawal. Although the two-way contingency table analysis did not return statistically significant results between the lack of librarian face-work and the instances in which users abruptly left the VR sessions, the frequency with which users abandoned queries during VR sessions indicates that this is an area that needs to be further researched.

Politeness Theory also asserts that as social distance increases, the degree of politeness shown in a face threat should increase. Such a positive relationship between the politeness contained in both face threats and refusal messages, especially the overwhelming lack of face-work put forth by users and librarians, is opposite of what Politeness Theory would predict. In VR interactions, users and librarians rarely, as found in the sample for this research, know each other or have the possibility of interacting in the future which places an emphasis on social distance.

Since nearly 50% of the users whose initial requests were refused chose to abandon their request, this type of behavior can be found to support Politeness Theory, in that rather than risk further threat to the librarians' negative face by pursuing the request,

users opted not to pursue their queries. On the other hand, over 41% of the users whose

initial face threats were refused chose to persist with the librarians to get information.

Such action works to further impede the librarians' freedom, and seeks to tether them to

the interaction. When users persisted, these threats to the librarians' negative face were

not found to be statistically significantly associated with each other. The intensity of the

refusals made by librarians did not correlate to the users' responses to refusals. Hence,

the analysis of the intensity of the refusals made by librarians did not provide supporting

evidence to explain why some users chose to persist and why some chose to abandon the

initial face threats. More research is necessary to explain why users either abandon a

request or pursue requests with almost equal frequencies.

The analysis of the communication of users who persisted to get their queries

addressed by VR librarians and those who abandoned requests after refusals were not

found to contain elements of face-work, which demonstrated statistical significance. This

finding means that the frequency with which users did not include face-work strategies

was not an occurrence by chance. Again, the fact that these interactions occurred in CMC

may explain some of the communication choices made by individuals. When second face

threats were made, librarians were more likely to issue them than users. Only 15% of the

second requests made by users were done by users who received a refusal by VR

librarians for the initial face threats made. 85% of the second requests made by users

were done after receiving an affirmative librarian response to their initial face threats.

This indicates that an initial refusal is likely to reduce the instances of users making a

subsequent face threat. When librarians issued second face threats, statistical significance

was found between the use of bald on record requests and a lack of face-work associated

with these face threats. Evidence for preserving and protecting one's own and the other's face in subsequent face threat communication content by librarians was not found. Additionally, users did not appear to be concerned with imposing on VR librarians since the majority of the subsequent face threats performed by users were done bald on record and as a threat to the librarians' negative face.

When second requests were made by librarians, users were more likely to respond with a type of agreement to perform the request, which differs from the responses to second requests the librarians issued. When users performed a subsequent face threat, librarians were more likely to refuse to perform the requests. When librarians issued a second request, many of the requests were met with the users' putting forth an affirmative statement of either compliance or agreement to perform the request. Such agreement was the same across different types of face threats that were performed by librarians. Users were willing to comply with the librarians' requests for approximately 75% of the face threats. When users issued second requests, similarly to the librarians, their face threats were mostly bald on record. What differs is that the users' second requests were found to be ignored by librarians approximately a third of the time. The types of face threats were not significantly associated with the librarians' choice of reply, nor were the users' type of face threats and librarians' response significantly associated. For both librarians and users 50% of the refusals were shown to precipitate from an unwillingness to perform the request. Whereas 50% of the librarians' refusals were done to show an inability, 25% of the users exerted such messages.

Each group was likely to respond to face threats with high intensity, which demonstrates a firm response. For each group of interactants, the intensity of the refusal

as part of an unwilling, inability, or focus off response were all associated with roughly

the same degrees of intensity, which indicates that regardless of the type of refusal

message, refusals were all likely to be strong. Additionally, most refusals, even those

made with high intensity, were frequently pursued by librarians and users instead of

being completely abandoned. Similar to Park's argument (2008b), it is important to

understand practice, since this informs interpretation and potentially the success of

interactions. Park's findings included that the peer-to-peer interactions were associated

with low imposition, but as power and distance increased there were increasingly more

positive or negative messages utilized by students. Since the findings in this study, which

utilized naturally occurring unobtrusive data, do not support Politeness Theory, it may be

the case that significant differences exist between analysis of experimental data and

naturally occurring data that was not produced for analysis. Westbrook (2007) also

utilized naturally occurring data, and found the inclusion of formality markers on the part

of VR librarians, which was understood to denote expertise. Further, Westbrook attached

the use of formal communication with the responsibility of performing in the capacity of

information professionals. Such findings are linked to the findings of this research in that

salient group identity was prevalent for the VR librarians in the sample of 168 transcripts.

Holtgraves and Yang (1992) also used Politeness Theory to analyze

communication in cross-cultural study that utilized subjects from the United States and

Korea. In this experimental design, subjects were asked to imagine situations in which

they would make requests. When the hearer's power increased, the politeness of the

communication increased. The results from this dissertation differ from these findings.

From the bald on record face threats, the frequency in which users abruptly left the VR

sessions without a closing, and instances of friction, power did not appear to impact the type of frequency of politeness. In the VR relationship, librarians could be viewed as having more power since they have access to information, but the users did not appear to acknowledge this type of power in this study. On the other hand, users may understand the librarians' position to be one that is "on call" and accessible when necessary, which places the power to contact a librarian on the users.

In addition, Politeness Theory assumes that the magnitude of the face threat is greater for requests involving greater imposition, which would mean the results from this study should demonstrate a greater frequency of negative politeness in subsequent requests; however, the findings do not support this. What the findings included was that when an initial face threat was refused, the users were less likely to assert a subsequent face threat. After refusals, users frequently chose to abruptly leave VR interactions, without a closing, and these interactions were coded as avoidance. Negative politeness shows deference toward the hearer and their negative face needs, but users did not show this type of concern for the librarians. In addition to leaving abruptly, the lack of negative politeness in the VR encounters may be more prevalent since users log on to receive service, which may not be viewed as an intrusion.

Amaral and Monteiro (2002) propose that CMC enables a new identity that co-exists with other identities in other media or FtF, which they term "technologic identity." They consider the Internet as a "communicational interactive space" in which individuals "manage their social identities" (p. 576). Those who use the Internet more than six hours a week are likely to develop an identity that is separate and "emotionally disconnected from other valued human relationship dimensions" (p. 587). In this effect, the

technological identity is projected online and is singular and separate from social identity dimensions. McQuillen (2003) also contends that CMC "may serve as a tool to encourage, permit, and assist in the development of interpersonal relationships; however, a relationship based solely on CMC will be significantly different from a relationship developed based on FtF" (p. 622). Perhaps Politeness Theory will evolve to incorporate the nuances of CMC and integrate politeness as it is constituted in mediated forms of communication.

5. Impacts of salient librarian identity on responses to users' face threats

Salient librarian identity was assessed in each of the 168 VR transcripts, and librarians exhibited a salient group identity in 74% of the interactions, and a salient personal identity in 26% of the interactions. The salient identities of the librarians were found to have a statistically significant relationship in regard to the frequency of agreement to users' initial face threats. Librarians who demonstrated a salient personal identity were more likely to agree to perform the users' requests than those who put forth a salient group identity. Although statistical significance was not identified for salient librarian identity and the frequency of refusals, differences were. Librarians who displayed a salient personal identity refused users' initial face threats less frequently than librarians that put forth a salient group identity. The types of refusals made by librarians putting forth a salient personal or group identity were not statistically significant. In the context of VR, librarians are subjected to de-individuating conditions in that they are visually anonymous (Spears & Lea, 1992) in the process of carrying out VR with users. Much of the communication that transpires is influenced by what type of librarian identity is salient at any moment during CMC interactions.

When librarians exhibited a salient group identity they posed unwilling responses 55%, which is higher as compared to when librarians exhibited a salient personal identity (33%). In addition, when librarians posed a salient personal identity this was associated with a higher rate of instances in which inability was coded as the cause of inaction, which occurred with the frequency of 47%, as compared to the 21% of the instances of inability associated with librarians displaying salient group identity. Clearly, salient librarian identity appears to impact the frequency and types of refusal messages, but the reasons behind this behavior are not yet known. The frequency with which librarians who portrayed a salient group identity and denied users' requests indicates that the affiliation to a library, or subscription to library policy, may place a critical role in determining which users' queries reach result in information, which is the purpose of this variety of goal-directed communication. Although in the VR interactions librarians are potentially identifiable, it is unknown if this aspect impacts the decisions made by the librarians to decline users' requests. While users may have the ability to learn of the librarians' identities, what remains is that VR librarians are usually fully identifiable by the library's administration and also other librarians with whom they work. This kind of high-profile identifiability by colleagues may have a large impact on the frequency with which librarians enact a salient group identity. The refusals, such as deciding what users' queries are appropriate for the service, include the following language, "Your question is inappropriate for this service" (qp381) indicating that, from the librarian's perspective, upholding policies for the service is important. It may be the case that the librarians find some users' queries as personally objectionable, but rather than refuse these requests by enacting a personal identity, a salient group identity was enacted as in the example above.

A salient personal identity may provide the librarians with a greater range of decision making as to how to respond to users' queries. Perhaps a salient personal identity may allow librarians to be more flexible in determining what questions were appropriate to answer, or how much help could be provided to answer homework questions. Although librarians who put forth a salient personal identity agreed to help the users with greater frequency, the quality of those interactions, or satisfaction of the outcomes was not measured. For example, in the "Bumper Cars" transcript (See Appendix A), the librarian produced a personal identity. Salient personal identity was coded since the librarian repeatedly asserted a lack of knowledge on the topic of the user's query. Such a lack of personal knowledge is used as an explanation as to why the query cannot be addressed, whereas if salient group identity were salient, perhaps the inability to locate a specific information resource could be used to show that the query cannot be adequately answered.. In other examples, librarians cited that the VR service was not to be used to answer homework questions, but this type of response was not utilized in the Bumper Cars example. Ultimately the user ended the VR session without an answer to the query, which appears to be a direct result of the librarian not personally possessing knowledge of physics. The user in the Bumper Cars example persisted to get the query answered and requested the aid of another librarian, "can i hav another librarian." Clearly, in this example, the interaction with a librarian who presented a salient personal identity did not enable the VR process to proceed toward reaching a resolution, even though it was met with an affirmative response, and agreement to help does not directly translate to the receipt of an actual answer. Yet in other instances in which users presented homework questions, librarians who put forth a salient group

identity and refused assistance, forwarded users to tutoring sites to help the users find answers to their queries. Even though the rate of affirmative responses to users' queries was higher when librarians put forth a salient personal identity, such acceptance to help cannot be interpreted as necessarily delivering a satisfactory answer to users' queries. At the same time, although librarians who exhibited a salient group identity refused users' queries with greater frequency it cannot be assumed that the users' queries were not addressed in a manner that users found as unsatisfactory.

6. Friction produced by librarians and users was found to be positively correlated.

Instances of friction that were produced by users and librarians significantly contributed to the decline of VR interactions. A positive relationship between instances of friction produced by librarians and users was identified. This finding indicates that as users and librarians engage in friction that instances of friction are likely to increase as the transcripts continue. Overall, librarians were more likely to produce communication that contained instances of friction, with 54% of librarians exhibiting this type of communication and 46% of users engaging in communication that contained friction. The users and librarians put forth different types of friction in the VR sessions. VR users were more likely to put forth friction in the category of discourteous behavior, such as leaving VR sessions without closing; whereas librarians engaged in communication that redirected users to other sources for information, often leading users to perform their own searches to find information rather than being directly assisted. Findings on friction indicate that users are much more likely to leave interactions rudely, without a closing ritual. Librarians' endings were also associated with friction and were found to be more likely to leave abruptly or close before the users could close when librarians employed

unwilling refusals. Additionally, after receiving focus off refusals, users were very likely to leave (70%) the VR interaction, either with or without a closing ritual.

In terms of friction use for librarians, librarians were found to be more likely to ask questions, which is an act that in many instances bounced the responsibility of finding answers to their queries back on the users. Such instances were coded as forms of redirection. Often, when librarians redirected the users, the users ended the session, although many persisted to get their queries handled by the librarians. There was a statistically significant relationship between the instances in which librarians redirected users in response to the initial face threats, and users opting to leave the interactions. In many instances, when librarians performed a redirection it took place in the form of a question, which contained an inquiry into what other resources the users had employed to initiate their searches for information. Traditional "reference interviews" that librarians engage in, for both FtF and CMC reference, consist of librarians requesting additional information from users to ascertain the progress of the user's search for information. In some of the transcripts in this sample, such questions appear to have been interpreted by users as forms of rejection, or a refusal to perform the request, which lead to instances where users ended VR sessions. Although both librarians and users engaged in instances of friction, there were no statistically significant associations with the instigation of friction by either party, so they were almost equally shared. Further, the degree to which users were anonymous or known did not have a significant relationship to the frequency of instances of friction produced in the transcripts.

Discussion of Non-statistically Significant Findings

The research undertaken in this dissertation produced a portion of statistically significant findings and a portion of non-statistically significant findings (See Table 9). As discussed above, overall the transcripts in this population of those that contained friction did not contain essential elements of face-work. However, the lack of face-work did not produce statistically significant results in terms of users' identity or anonymity, even though no face-work was found in 31% (N=5) transcripts with anonymous users and 18% (N=3) users. The percentages demonstrate a decrease of face-work when users are anonymous, but the very low Ns may explain why statistical significance was not achieved. Using a crosstabulation, initial face threats that were refused by librarians or subsequent face threats made by users or librarians, and also refused, was not found to be statistically significant in relation to the types of intensity that accompanied the refusals (See Results for R1b, RQ2c, RQ2d, and RQ2e). Again, the Ns for these analyses were extremely low, which may contribute to the lack of statistical significance.

Librarians' refusals to users' queries, as detailed in Results for RQ1c, did not produce statistical significance. Stemming from librarians' refusals to their initial queries, users were found, in almost equal percentages, to either persist to get an answer or to abandon the request at that juncture in the VR interactions. Reasons that contribute to factors that influence these decisions are an area for future research. Results for RQ3 and RQ3a did not find that the types of refusals issued by librarians in response to the users' initial face threats impacted the choice of departure from the VR sessions for the users. Similarly, in RQ3 that detailed frequencies of librarians' transcript endings, statistical significance was not found. It is likely that there are mitigating variables that occur

between the beginnings and endings of these transcripts that may explain the lack of a direct connection refusals have on users' closings, or that such interactions correlate with little face-work. Additionally, a larger sample size may yield more insight into these interactions.

The salient librarian identity was not found to be statistically significant in relation to how users ended VR sessions, the instigation or types of friction produced by librarians, or for the association of friction and users' degree of anonymity (See RQ4a, RQ6c, and RQ6d), which may indicate that issues of identity are not related to instances of friction in these forms of electronic service encounters. In most cases, a very low count of instances, or very low frequencies, may inhibit the statistical examination and may explain the lack of statistical significance.

Additional Insights

Since VR is a service that users log onto to identify answers to queries, and its purpose is to support goal-directed communication, it is not surprising that initial face threats were produced bald on record with greater frequency than any other types of face threats. VR serves as an information function and the core of the interactions revolves around the negotiation between users and librarians to resolve queries, and is not constructed for the purpose of developing lasting interpersonal relationships. In the transcripts in which friction was identified, these interactants do not appear to be concerned with building a more permanent relationship, but merely constructing a temporary working relationship until the transcript ends. Radford (1993, 1999) noted that librarians need to be more aware of and committed to the need to build relationships through communication since users' satisfaction is tied to both relational and

informational elements during the interaction. Perhaps it is the case that transcripts that contain friction are produced by individuals who view the service as only a means of information transactions, which may explain the lack of positive and negative politeness and the profound lack of face-work.

The findings, as discussed in the Results for RQ1b, indicate that the types of face threats users engaged in did not react with the librarians' refusal intensity. This finding suggests that librarians may not have felt that the process was disrespectful and lacking politeness, which highlights the fact that these are goal-directed interactions and not interactions that take place to build relationships. Although the findings from RQ1c, in which users responded to refusals in different ways, did not produce statistically significant results, the interactions yield important insights.

It appears that refusals to face threats give users two primary responses: persist or withdraw. In the responses in which users persisted, face-work, positive and negative politeness was largely absent. In the Results for RQ1d, in which users' responses to refusals were evaluated based on the use of librarians' face-work, statistical significance was found for the frequency with which users asserted themselves and persisted to get an answer or abandoned requests. In these instances face-work was largely absent, which was a significant finding. Users' messages in which persistence was used were produced with great frequency without any form of face-work. Walther and Bunz (2005) highlighted the need for interactants to "overtly acknowledge that you have read one another's messages" (p. 843), which was found to positively impact relationship development. However, in the VR transcripts, neither users nor librarians acknowledged each other. In the instances in which librarians redirected users, the users' information

needs were often not addressed. Instead, redirecting users to other sources of information served as a kind of electronic finger pointing to motion the user to proceed in a different direction to get information to answer their queries. Additionally, the Results for RQ1e, in which face-work evidenced in users' responses to refusals was evaluated, statistically significant associations were found, and these findings underscore the implication of the lack of face-work in communication in VR transcripts that contain friction. Bald on record face threats produced by librarians were found to have a statistically significant relationship to threats to hearers' negative face. Users' face threats and threats to negative face were not significantly associated, even though the frequency of bald on record requests comprised 75% of the requests made and 93% were threats to the librarians' negative face. These results once again underscore the concentration of goal-oriented behavior in this form of CMC, which appears to place value on making requests without regard for the degree of imposition these requests have on the hearers. Such actions may be impacted by the format of the electronic interface itself for VR interaction. Prior to the initial contact between users and librarians, each user must use the electronic interface offered by the VR service. Generally, VR services prompt the users to enter a query in a box provided, which may promote more of a interpretation of the service with a type of search engine rather than a personal interaction with librarians. Search engines are used as efficient mechanisms to find information, and such perceptions by users may carry over to the VR interactions and it is not known what impacts these may have on the service encounters.

The endings of the transcripts were also analyzed to evaluate the relationship between types of face threats and types of endings. Both users and librarians engaged in

abrupt endings with moderate frequency. The types of the endings of the transcripts were not found to have a significant relationship to the types of face threats that were put forth by users or librarians. Additionally, the types of endings users engaged in were not found to have a significant relationship to the librarians' responses. In this way, findings indicate that whether or not users' initial face threats were received with agreement or compliance, or refusals, such as unwillingness, inability, or focus off, the type of ending utilized by the users did not appear to have a relationship to the librarians' responses.

Overall, the types of face threats initially put forth by users did not seem to impact the types of librarian agreements or refusals, or the intensity of the refusal messages. Further, both user and librarian communication for face threats and refusals were devoid of face-work for the majority of these interactions. Due to these common elements, the types of endings employed by users and librarians do not appear to have a significant relationship with the types of face threats put forth. Overwhelmingly, the results indicate that librarians and users formulate requests and refusal messages without positive or negative politeness, yet the lack of these social elements does not appear to lead to greater instances of friction or abrupt endings. Rather, the types of users' endings in the VR transcripts appear to be influenced by the librarians' types of refusal messages. In some instances, after overt or subtle librarian action, users ended the VR sessions without closing, which could be considered a process of avoidance, which is how it was coded, or as an of friction, showing one's dissatisfaction by leaving the session abruptly. Another way to conceive of this form of interaction is to focus on the medium in which it transpires, since the purpose of this form of CMC is not to necessarily facilitate a relational process, but instead foster a goal-directed working relationship. The

communication identified in this research highlight textual qualities that underscore that it is a process that is a means to an end. The lack of positive or negative politeness and face-work for both users and librarians illustrates VR as a form of CMC that is oriented to address needs for information. In this process interactants engaged in communications practices to assist that need, and did not include other communication activities, such as relational development.

CHAPTER SEVEN

Implications and Conclusion

Since 2000 daily use of the Internet for American adults has grown from just over 50% to 75% (Pew Internet & Life Project surveys (2000-2009). Included in this analysis is the increase of online banking, which saw a daily usage increase from approximately 2% for American adults in 2000 to 18% in 2009; the results do not segregate chat banking from other types of online banking. While the tools of librarians have changed, the mission of the reference librarian has not (Kresh, 2002/2003). New insights into the types of relationships that are established in virtual settings and the types and processes of face threatening interactions will help inform these services. Indeed, chat is a form of online communication and customer service that is being offered widely in the service industry, including online catalog shopping and online banking, and the findings from research on face-work can be applied to any industry that utilizes chat to create, maintain, or address consumers. The research presented here was initiated to assess CMC interaction, specifically VR transcripts, to address an area of research that is underrepresented in the literature in the areas of Politeness Theory, face-work, and conflict. While literature about CMC is extensive, very few studies analyze goal-directed, naturally occurring instances of interaction, which was the foundation of this body of research. The findings of this research will inform the literature and provide insights into transactions between interactants as they negotiate the process of query resolution. Additionally, the findings from this research can be used to inform theory and practice, as well as identify areas for future research.

Implications for Theory

Attitudes and behaviors of those who use CMC to conduct electronic service encounters may be different from views of interaction in Goffman's (1967) notion of face-work or Brown and Levinson's (1987) Politeness Theory, as evidenced in the negative interactions that were conspicuously absent of face-work and politeness. Certainly, during a FtF service encounter, if a customer's requests were refused, it may be unlikely that the customer would simply withdraw from the interaction without some kind of communication, either verbal or nonverbal. New norms and practices regarding electronic forms of interface may elicit new notions of how polite behavior is constituted. In electronic service encounters, perhaps it is acceptable to simply leave an interaction after receiving a response, even when the response to a face threat is a refusal. Amaral and Monteiro (2002) suggest that the identity put forth in CMC interaction may exist with other identities exerted in other forms of mediated interaction and FtF communication. In CMC, individuals may be afforded additional ways to manage social identities, and such an identity may be impacted by the frequency or amount of time individuals spend performing CMC interactions. Amaral and Monteiro found that individuals who spent more than six hours a week online were likely to develop an identity that was more "emotionally disconnected" (p. 587) than other types of human relationships. The overall lack of politeness and face-work may support this type of less emotionally engaged identity discussed in Amaral and Monteiro's research, as well as elements from McQuillen (2003). McQuillen asserts that while interpersonal relationships can develop in CMC mediated interactions, these relationships will be significantly different than relationships that develop FtF.

Interactions in CMC for the purpose of interpersonal communication, personal relationship maintenance, and to carry out service encounters may themselves provide a significant degree of disparity. It is likely that individuals approaching communication for different purposes will construct messages differently. Perhaps Politeness Theory is not applicable for electronic service encounters that are used as information gateways. Such goal-oriented interactions are streamlined patterns of communication that appear to cut out conventions of politeness that are usually evidenced in other forms of interpersonal communication. However, Politeness Theory may prove to be highly informative in the analysis of other types of service encounters, such as online therapy.

Implications for this research method includes the need to differentiate between users who leave the VR session after the librarian puts forth a refusal message to show dissatisfaction and those who leave to avoid further interaction with the VR librarian. Leaving to show dissatisfaction places a negative association on the service or the librarian and, on the other hand, avoidance places the negative connotation on the users, who may seek to avoid further interaction to limit the degree of shame that may be experienced. The findings of all the variations of leaving VR sessions for librarians and users can serve to inform the RRCS, in that this coding scheme categorized abrupt departures in a single category. Findings from this research demonstrate that users and librarians both leave VR sessions abruptly but for different reasons. Such nuance may extend the RRCS to better inform elements of interaction that impact relationship development in the study of VR as a form of interpersonal communication and link elements that contribute to relational barriers. In one instance, leaving the session abruptly without closing is an impolite action, on the other hand leaving a session as

means to withdraw to prevent negative interaction, serves to preserve the face of both interactants. It's unclear which strategy can be assigned to such instances.

This dissertation pursued face threats from the initial requests users put forth and resulting communication with the goal of understanding what friction elements lead to greater instances of friction. It also investigated whether or not politeness plays a central role in the types and frequencies of friction demonstrated by users and librarians in a mediated form of service encounters. The data for this research was targeted to only those transcripts out of the initial international random sampling of 746 usable VR transcripts gathered over a 17 month period that contained friction. This data selection produced 168 transcripts that contained more obvious forms of negative interaction, including insults, reprimands, and both users and VR librarians leaving the VR sessions abruptly. When librarians refused the users' face threats the users frequently opted to leave the sessions without closing. That is, users opted to leave the sessions without the ritual closing that is part of our contract for interaction (Goffman, 1967), and without positive or negative politeness that traditionally serves to maintain positive rapport in interactions and show deference for another. Since the focus of this research was on transcripts that possessed some type of friction, additional research to learn about the similarities or differences of these findings compared to transcripts that do not contain elements of friction is necessary. It may be the case that the subset of transcripts with friction lack positive and negative politeness, which may make the individuals involved more predisposed to producing messages with friction. On the other hand, it may be the case that these interactions overall do not contain elements of Politeness Theory, even when transactions are more positive.

Implications for Practice

The format of a reference encounter may be similar in FtF reference and VR reference; however, the process and outcomes of this interaction may be quite disparate. For example, the findings of the research presented here indicate that when librarians perform a "reference interview," in the shape of a question that sequentially follows the users' initial face threat, users typically produce one of two responses. The reference interview essentially answers the users' queries with another question, which may not be viewed by the users as moving the process of getting information forward. Although this research did not seek to isolate reference interview questions from other types of questions performed by librarians, the findings indicate that users perhaps respond to questions from librarians such as "have you checked your online account," as directives, rather than a just a simple reference interview question. As a result, with moderate frequency users ended the VR sessions immediately following questions of this type. From the reactions the users had to questions such as this, it seems that the reference interview questions served to place an emphasis back on the user to take action rather than as a message to continue the interaction. It is also possible that when librarians asked direct questions this may have caused the users to leave because they felt shame-faced (Goffman, 1967). Shame is an outward display of an inner emotion. An implication for practice might be for VR librarians to include messages of willingness to help users. To that end, the need to obtain additional information to proceed as effectively and efficiently as possible, which is the goal of a reference interview, could act to promote a positive working relationship rather than impede it.

As the results indicate, friction between librarians and users was found to increase together. Another implication for practice may be to heighten librarians' awareness to friction, and its negative consequences, to diffuse these situations at the onset of negative interactions.

Limitations

There are some limitations that are evident prior to the analysis, one of which is that the process of data collection of the transcripts does not allow access to the VR librarians or users. Transcripts were stripped of all demographic and other information, such as email addresses. In the process of scrubbing the data, user and librarian names were replaced with brackets that include a descriptor of what personal information was removed. For example, if a user provided an email address, the actual email has been removed and replaced with [user email]. This process has preserved the type of personal information, without details, that was provided by librarians and users in each interaction. Due to the removal of this information, the option for clarification or follow-up questions with these individuals is not possible, since the interactants remain anonymous. The librarians and users are not able to inform the analysis as to their feelings or interpretations of offensive interactions (or if indeed they found them offensive at all), and it is not possible to get the interactants' interpretations of the text.

It was also not possible to follow-up with the anonymous VR users and librarians for additional research. It would be interesting to learn more about the reasons users chose to leave VR sessions by abandoning requests rather than pursuing the queries. Analysis of the meaning of text can only be based on inference and typed responses available in the chat transcripts. Additionally, analysis of text and its meaning, its

intention and understanding, is subject to coder interpretations. Inter-coder reliability scores are deemed to be sufficiently high to rule-out substantial subjectivity. This study necessarily treats VR librarians as one homogeneous group along several dimensions, including age and gender.

There are limitations to the methodology, as well. For example, the TSCS allows for the coding of many different types of communication associated with requests and refusals, as well as types of endings. What is not able to be assessed is the degree to which elements of politeness that is missing from these interactions negatively affect the interactions from the perspectives of the information professionals or the users of VR. It may be the case that users value the convenience of the potential access to information that is afforded in chat reference and are not concerned with the interaction itself. Rather, the importance of the interaction may be in the receipt of desired information. Conversely, VR librarians may also have other priorities when it comes to electronic encounters with users, which outweigh the importance of having polite exchanges with users.

Areas for Future Research

More research is necessary to understand whether or not other instances of electronic service encounters are found to be devoid of face-work. This calls for more research on the perspectives of electronic service providers and consumers, and a better understanding of the expectations of interaction in these forums for service encounters. Further, follow up research to better understand the choices users and librarians make in how face threats and refusals are formulated would inform attitudes and values toward

electronic communication, mediated service encounters, and the degree to which the

pervasiveness of CMC impacts these message choices. For example, SMS (text

messaging) allows for a maximum capacity of 160 characters for most cell phones;

additionally, the microblog Twitter.com allows for a maximum capacity of 140

characters. Mediated service encounters place a priority on efficient and task-oriented

communication, and could mean that the extra space and extra characters used in this

communication to produce polite messages is not valued.

Additional research is necessary to understand why VR interactions, and perhaps

other forms of electronic service encounters, do not contain more polite interactions, with

evidence of concern for face. Additionally, research into the types of VR interactions that

are not wrought with friction, and into the frequency and types of politeness that are put

forth in the content of the users' face threats and VR librarian refusals, would also

provide additional insight. The findings from this research highlight a lack of politeness

and a lack of face-work, but a question remains as to how much users and librarians value

these elements. Additional research into the value users place on getting information, and

perhaps getting specific kinds of information, would be useful to explain why some users

persisted to get their queries answered and why other users abandoned their requests.

Furthermore, given the limitations of this research, which included not having

access to the users or librarians to ask questions about motives or thoughts, more research

is necessary to understand the thought processes behind the lack of face-work elements in

this variety of communication to explain these choices as being related to individuals' or

explained by the medium in which this communication took place. Additional studies to

learn more about attitudes toward service encounters in the CMC environment, especially

related to single-instance interactions, may yield additional understanding about the views of politeness in service encounters conducted through mediated channels. More research into the attitudes toward online service encounters needs to be carried out to better understand the attitudes users have towards these services and service providers. It may be the case that Politeness Theory is not completely applicable, especially if users believe that service providers are present to provide a service and not a relationship with whom polite behavior needs to be demonstrated. It may also be the case that goal-directed types of service encounters are perceived as more polite when the interactants do not take up space in the interaction with salutations or closings, and exchange information that is more "necessary" for the interaction.

There are many varieties of service encounters to which this type of methodology can be applied. The research undertaken as part of this dissertation is performed in a setting in which others, such as library administrators or other librarians, can view the librarians' chat reference interactions. This type of possible access and review of chat interactions is likely a typical phenomenon across industry. In any type of chat interaction, face threats, frequencies and types of refusal messages can be assessed for negative and positive politeness. Additionally, the face-work that is common in many instances of FtF interaction, such as ritualized greeting and closings can also be studied in mediated form of communication, such as CMC service encounters across industry.

Conclusion

CMC communication is proliferating and being used with greater frequency for a wide variety of business-related interactions. At this point in time, the baby boom

generation, born between 1946 and 1964, can remember when banking transactions took place in person, and without the aid of automated teller machines (ATMs), and a time when computers were not available for home use. More recent generations cannot remember a time when computers were not available, or a time before the Internet existed. As younger generations come to use technology to carry out business transactions, this difference in experience may create a departure from how politeness is constituted and the importance placed on face-work. Technology, as illustrated by the VR transcripts for this research, allows for anonymous, short, text-based interactions. Over time, such interactions are likely to increase. As CMC service encounters proliferate and they are used by generations who only can recall mediated service interactions and as research such as this study is conducted, Politeness Theory will evolve to include what is constituted as mediated politeness and what is constituted as FtF politeness. In regards to a contribution to Politeness Theory, it may be the case that as the adoption of these new technologies increase, constraints from one form of electronic communication may impact other forms of CMC interaction. Instead of using positive and negative politeness in chat interaction, which takes up greater space and more characters, perhaps getting to the point and posing bald on record face threats is what is important, and perhaps not impolite.

Another important differentiation revolves around the purpose and value of VR, which are similar to other goal-directed forms of service encounters. Users log onto VR services to get answers to queries in real time, and this service is free to them. In other types of industries, such as banking or online shopping, such chat services revolve around existing clients or potential consumers of products and services. The foundation of these

industries is financial transactions, which pose a concern for the financial interests of these types of companies. This is not the case for VR. If VR users choose to leave a session without getting information it is less likely that such interactions will negatively impact the library's financial situation. However, if chat interaction during an online banking service encounter erodes and clients find that the bank representatives with whom they are chatting are impolite or unknowledgeable, such interactions could possibly lead to clients choosing to do banking elsewhere, thus generating a greater emphasis on emotional labor (Shavelsky, 2006). Similarly, if during an online shopping interaction a consumer opted to use the chat services, once again if the interaction devolved and the consumers received an instance of friction, it could be likely that they would choose to shop elsewhere. Often, organizational representatives have limited way of dealing with unpleasant interactions, which emphasis the power of the patron. When chat services are intimately tied to a company's financial situation it may be more likely for employees who perform chat service to engage in more polite interactions.

The research presented here answered some questions, but also highlighted important questions as to the applicability of theory that initiated from FtF communication and is now being extended to CMC interactions. Technological impacts on communication is a fervent topic of study, and future research will help us understand what types of interactions are valued for CMC service encounters, and also inform how theories evolve to address the nature, content, and outcomes of such interactions.

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Appendix A: Sample VRS Transcript

Negative Transcript Example "Bumper Cars" (TS 75)

U	Physics
L	[Please hold for the next available librarian. If you would like a transcript of this session e-mailed to you, please type your full e-mail address now.]
L	[24/7 Librarian [Name] - A librarian has joined the session.]
U	Which way is ur car accelerating when you're thrown forward after hitting another bumper car?
L	Is this a homework question.
L	I'm not an expert on driving so I really can't answer that.
U	can u find a website or something
L	I'm not sure what you are asking.
U	....
U	hello?
L	I really don't understand how I can answer that for you.
U	can i hav another librarian
L	The information you gave you me does not help me find any resources to help you.
L	What do you mean by which way is your car accerlaerating. Are you sure thats what your assignment asks.
U	yes
L	What subject is this question from?
U	physics
L	Okay just one moment.
L	[Page sent] http://www.dctech.com/physics/help/waves/
L	This is one site that may help.
L	[Page sent] http://www.ncsu.edu/felder-public/kenny/home.html
L	[Page sent - LeapStart Learning Table. Learning Starts Here!] http://ad.doubleclick.net/adi/N3535.ValueClick/B1369519.3;sz=468x60;click= http://oz.valueclick.com/redirect?host=h0266751&size=468x60&t=js&c=82&t arget_id=0&hcat=us&banner=a0147825&vcurlpreserve=;ord=1098059460.12 43708
L	this is another site that youmay try forhelp.
L	When we disconnect youwill have these links in a transcript.
L	[Page sent] http://www.physicsclassroom.com/
L	This site looks to be very helpful.
L	[Page sent - The Physics Classroom] http://www.physicsclassroom.com/morehelp/index.html
L	[Page sent - The Physics Classroom] http://www.physicsclassroom.com/morehelp/recforce/recforce.html
L	[Page sent - The Physics Classroom] http://www.physicsclassroom.com/morehelp/index.html

U	this isn't helpful
L	Well I really don't have any other resources that can assit you.

Negative Transcript Example "Bumper Cars" continued

L	[Page sent - The Physics Classroom] http://www.physicsclassroom.com/Default2.html
L	I cannot answer the question for you, I don't have the physics knowledge.
L	Maybe you will need to ask your instructor for a clear understanding.
L	[Page sent - The Physics Classroom] http://www.physicsclassroom.com/Class/momentum/momtoc.html
U	do u kno ne1 who does
L	[Page sent - The Physics Classroom] http://www.physicsclassroom.com/Class/momentum/U4L1a.html
L	Sorry I do not.
U	ok
L	I have a few patron that I ned to assist.
U	ok bye

Appendix B: Radford Relational Coding Scheme

Radford Relational Coding Scheme (Radford & OCLC, 2008)

FACILITATORS
    Greeting Ritual
    Deference
        Agreement to Try What is Suggested or to Wait
        Apology
        Asking for Other to Be Patient
        Expressions of Enthusiasm
        Suggesting Strategy or Explanation in a Tentative Way
        Polite Expressions
        Praise, Admiration
        Self-Deprecating Remarks
        Thanks
    Rapport Building
        Familiarity
        Humor
        Informal Language
            Alternate Spelling, Abbreviated Single Words
            Slang
        Hedges/Interjections
        Offering Confirmation
            Approval
            Empathy
            Inclusion
        Offering Reassurance
            Encouraging Remarks, Praise
        Repair, Self-Correction
        Seeking Reassurance, Confirmation, Self Disclosure
        Self Disclosure
            Admitting Lack of Knowledge, At a loss as to where to search
            Explaining Search Strategy
            Explaining Technical Problems
            Offer Personal Opinion, Advice, Value Judgment
        Rerepresentation of Nonverbal Cues
            ALL CAPS
            Alpha-Numeric Shortcuts
            Asterisk or Symbol for Emphasis
            Ellipsis
            Emoticons
            Lower Case
            Phrase Abbreviations
            Spells Nonverbal Behaviors
            Punctuation or Repeated Punctuation

Closing Ritual
>Explanation Abrupt Ending
>Invites to Return If Necessary
>Makes Sure User Has No More Questions
>Offers to Continue Searching & E-Mail Answer

BARRIERS
>Negative Closure
>>Abrupt Ending
>>Disclaimer
>>Failure to Refer
>>Ignoring Cues that User Wants More Help
>>Premature or Attempted Closing
>>Premature Referral
>>Sends to Google
>Relational Disconnect Failure to Build Rapport
>>Condescending
>>Derisive Use of Spelling NV Behaviors
>>Disconfirming
>>Failing to Offer Reassurance
>>Failure or Refusal to Provide Information when asked
>>Goofing Around
>>Ignoring Humor
>>Ignoring Self-Disclosure
>>Impatience
>>Inappropriate Script or Response
>>Inappropriate Language
>>Jargon, No Explanation
>>Lack of Attention or Ignoring Question
>>Limits Time
>>Mirrors Rude Behavior
>>Mistakes
>>Misunderstands Question
>>Reprimanding
>>Robotic Answer
>>Rude or Insulting

Appendix C: Textual Semantic Coding Scheme
Definitions and Examples

Term/Concept	Definition	Transcript Example
Abandoning request	Interactant does not pursue request	User leaves the VR session, either with or without closing.
Agreement to perform request	Indicating agreement textually or by doing requested action	"Please wait while I check some sources." (qp436)
Anonymous (See User Anonymity)	User did not provide name or e-mail address, and remains for the duration of the interaction fully anonymous.	
Avoidance	Interactant evades situation that may threaten his own or the other's face	User may log off to avoid further interaction or leave the interaction abruptly without closing.
Bald on record (without redress):	Unambiguous requests. Such as, "Hurry up!" (adapted from Brown & Levinson, 1987)	"What helps identify products, store goods, and arrange displays in a store" (qp74)
Barriers	Interpersonal aspects of the chat conversation that have a negative impact on the librarian-client interaction and that impede communication (see also Radford, 1993, 1999	
Compliance	Showing ability, willingness or focus on carrying out request, which is shown by performing the request.	"Vertigo is defined as "the sensation of dizziness" or "a confused disoriented state of mind (from the American heritage Dictionary, p. 1525" (qp353)
Corrective action	Seeking to correct one's own text or to correct the text of others.	No transcript examples
Face-work strategies: see avoidance, repair, corrective action	Actions that support one's face and/or the other's face in interaction.	
Facilitators	Interpersonal aspects of the chat conversation that have a positive impact on the librarian-client interaction and that enhance communication (see also Radford, 1993, 1999).	

Term/Concept	Definition	Transcript Example
Focus Off	Focus being on the individual to take action or focus being on the situation to guide action.	"Let me get you the tutors" (ts74)
Friction	Reprimands, insults, and impolite language and actions	
Group identity (See Salient Identity)	Librarian enacts professional. Salient professional identity may include citing library policy.	
Identifiable (See User Anonymity)	User provided his or her e-mail address	
Identified (See User Anonymity)	User provided his or her name	
Ignores request (Positive face threat)	Non compliance by not addressing request, but not explicitly stating that request will not be addressed.	User's face threat: "I am doing an biography on actor Brad Pitt, and I would like to know what age he graduated from high school could you find that info for me? Librarian's response: "Have you tried looking at his official website." (ts111)
Inability	Citing non-compliance as an issue with inability to perform task	"I'm working with other patrons now" (ts262); "I'm not an expert on driving so I really can't answer that" (ts75)
Intensity	Communication engaged in to refuse a face threat or in a response to a refusal. Intensity ranges from low to acute.	Low: "We're experiencing a busy time right now, thanks for your patience. Would you like to continue to wait, or log on again later when we're not so busy?" (ts98) Slight: "Have you checked Worldcat which you should have at your library" (ts94) Moderate: "I would suggest you speak with your career guidance office." (qp21) Acute: "Let me get you the tutors, they are able to help you understand this kind of problem." (ts74) High: "I don't believe I can provide you with any facts

Term/Concept	Definition	Transcript Example
		for your question." (qp162)
Known (See User Anonymity)	Interaction shows familiarity between librarian and user.	
Negative Politeness	Includes giving other option to not to act, minimizing threat by giving deference, such as hedges. "Well"; and statements that avoid the use of pronouns "I" and "you." (adapted from Brown & Levinson, 1987)	"Sophie kept track of how many points she go in 6 ping pong games None of the scores are higher than 21. the range is 10 points and the mean is 17 points." (qp436); "facts on wyoming" (qp524)
Off record	Vague or ambiguous statements, which may include hints and hedges. (adapted from Brown & Levinson, 1987)	"I want to learn about how to have telekinetic powers" (ts110)
Offenses to Hearer's Negative Face	Speaker indicates they will not avoid hearers' freedom, which includes asserting a future act necessary for the hearer. Includes requests, suggestions, advice, or threats and reprimands. (adapted from Brown & Levinson, 1987)	"I want to check if book is in that i ordered yet" (ts 015) "what is the french resistance?" (ts 212)
Offenses to Hearer's Positive Face	Speaker expresses that hearer's needs or wants are not desirable, which includes disapproval, criticism, and disagreements. (adapted from Brown & Levinson, 1987)	"thanx but ive seen this 1 befor" (ts030)
Offenses to Speaker's Negative Face	Thanks; acceptance of apology. (adapted from Brown & Levinson, 1987)	"thanx but ive seen this 1 befor" (ts030)
Offenses to Speaker's Positive Face	Apology. (adapted from Brown & Levinson, 1987)	"not to be mean or anything, is that all" (ts 132)
Persistence	Showing determination to have request met.	VR Librarian: "Here is the Microsoft's Product Support site for Access" User's response: I don not understand this site, I tried it several times before I have never had any success with it." (qp385)
Personal Identity (See Salient Identity)	Librarian enacts a personal identity. Salient personal identity may include offering personal opinions.	

Term/Concept	Definition	Transcript Example
Positive Politeness	Includes statements that seek agreement and may include humor or joking, such as "That's interesting," (adapted from Brown & Levinson, 1987)	No transcript examples
Refusals: see unwilling, inability, or focus off	Rejection of request.	
Repair	Providing repair to one's one mistake in typing	No transcript examples
Responses to Refusals: see also persistence, seeking another target, or abandoning request	Response when a request is met with a type of rejection.	
Responses: See compliance, agreement, or ignores request	Responses to the initial request	
Salient Identity: see personal identity or group identity	The identity that is enacted during communication.	Salient group identity, demonstrating compliance with policy: "We can't help with specific homework questions" Salient personal identity:
Seeking another target	Taking request to another person or pursuing another avenue to achieve a successful outcome.	"can i hav another librarian" (ts75)
User anonymity: see identified, identifiable, or anonymous, known	The degree to which the user is known or is fully anonymous.	Anonymous: No personal information is present Identifiable: User email or user screen name is presented Identified: User's name is presented Known: User identity is recognized by librarian
Unwilling	Demonstrating an unwillingness to comply with request.	"Yes, we do have some titles. A quick way to see what we have is to search the catalog using the subject keywords "Tibetan medicine." (qp132)

Appendix D: Textual Semantics List of Codes

Units of Analysis: Line by Line Coding	Units of Analysis: Transcript Wide Codes
1.0 Request	**11.0 Opening of Transcript (Greeting)**
1.1 Off Record	11.1 User typed greeting
1.2 Negative Politeness	11.2 User did not type greeting
1.3 Positive Politeness	11.3 Librarian typed greeting
1.4 Bald on Record	11.4 Librarian did not type greeting
2.0 Face Threat Orientation to Request	**12.0 Ending of Transcript**
2.1 Offense to Speakers Positive Face	12.1 User signs off
2.2 Threat to Speaker's Negative Face	12.2 User leaves abruptly after subtle librarian action
2.3 Threat to Hearer's Positive Face	12.3 User leaves abruptly after overt librarian action
2.4 Threat to Hearer's Negative Face	12.4 User signs off abruptly to show dissatisfaction
3.0 Agreement to Request	12.5 User signs off abruptly (no explanation)
3.1 Compliance	12.6 User signs off abruptly (other explanation)
3.2 Agreement to Perform Request	12.7 User leaves due to waiting
3.3 Ignores Request	12.8 Librarian leaves abruptly w/o closing
4.0 Refusal to Request	12.9 Librarian closes
4.1 Unwilling	12.10 Librarian leaves abruptly w/ explanation
4.2 Inability	**13.0 Librarian Identity**
4.3 Focus Off	13.1 Personal Identity is salient
5.0 Refusal Intensity	13.2 Group identity is salient
5.1 Low	**14.0 User Identity**
5.2 Slight	14.1 Completely anonymous user
5.3 Moderate	14.2 Identifiable user
5.4 Acute	14.3 Identified
5.5 High	14.4 Known (familiarity)
6.0 Face-work Strategy for Refusal	**15.0 User identity action**
6.1 No face-work	15.1 User discloses identity
6.2 Avoidance	15.2 Librarian requests user's identity
6.3 Repair	15.3 User remains anonymous (deliberate)
6.4 Corrective Action	**16.0 Source of Friction**
6.5 Deference	16.1 User
6.6 Apology	16.2 Librarian
7.0 Response to Refusal	**17.0 Type of Friction**
7.1 Persistence	17.1 Rudeness
7.2 Seeking another target	17.2 Insult
7.3 Abandoning Request	17.3 Reprimand to perceived insult
8.0 Refusal Intensity (See 5.0)	17.4 Reprimand to direct insult
9.0 Face-work Strategy for Refusal	17.5 Reprimand, unknown cause
(See 6.0)	17.6 Goofing off
10. Subsequent Requests use 1.0	17.7 Reprimand to goofing off
(use R2, R3, etc.)	17.8 Redirect
(Repeat 1-9 as necessary)	17.9 Other
	18.0 Status of Query
	18.1 Answered
	18. 2 Not answered
	19.0 Reference to Waiting
	19.1 Yes
	19.2 No

Vita

Jocelyn Aline DeAngelis

Education

2010   Ph.D. in Communication, Information and Library Studies, Rutgers, The
            State University of New Jersey, New Brunswick, New Jersey.

1998   M.C.I.S in Organizational Communication and Organizational
            Psychology, Rutgers, The State University of New Jersey, New
            Brunswick, New Jersey.

1997   B.A. Double Major: in Communication and Journalism and Mass Media,
            Rutgers, The State University of New Jersey, New Brunswick, New
            Jersey.

Experience

1999-   Adjunct Professor, School of Communication, Information and Library
            Studies, Rutgers, The State University of New Jersey, New Brunswick,
            New Jersey.

2005-2008   Project Manager, "Seeking Synchronicity: Evaluating Virtual Reference
            Services from Users, Non-Users, and Librarian Perspectives," Rutgers,
            The State University of New Jersey, New Brunswick, New Jersey.

1997-2001   Graduate Associate, Center for Organizational Development and
            Leadership, Rutgers, The State University of New Jersey, New
            Brunswick, New Jersey.