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Technology and Communication: Emerging Family Communication Patterns Among Young Adults and the Influence of Technology

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To the Graduate Council:

I am submitting herewith a thesis written by Shilpa Venkateshwaran entitled "Technology and Communication: Emerging Family Communication Patterns Among Young Adults and the Influence of Technology." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Communication.

Sally J. McMillan, Major Professor

We have read this thesis and recommend its acceptance:

Eric Haley, Michelle Violanti, Terri Combs Orme

Accepted for the Council:
Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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Anne Mayhew
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Dean of Graduate Studies

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TECHNOLOGY AND COMMUNICATION:
Emerging family communication patterns among young adults and the influence of technology.

A Thesis
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ABSTRACT

The purpose of this study was to understand the emerging family communication patterns among young adults and the influence of technology. This study of young adults tried to study the two family types: conversation-oriented and conformity-oriented and the influence of technology has on the family types. E-mail is fast becoming an important mode of communication and hence the study of the adaptation of this media in family communication is important during the transition phase. This study tried to find the predicted changes in communication.

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CHAPTER I

INTRODUCTION

The family is often regarded as one of the most interesting and influential interpersonal systems and nowhere is its influence on individual behaviors more profound than in the area of communicative behaviors (Berger & Luckmann, 1967; Fitzpatrick & Ritchie, 1994; McLeod & Chaffee, 1972). Reiss (1981) has argued strongly that families are characterized by uniquely shared worldviews, values and belief systems. These values and belief systems have far reaching consequences for how family members perceive their social environment and their family's place in it and, as a consequence, how they communicate within it.

Family communication molds the communication patterns of all the family members and when any of these family members moves out of the home, he or she is influenced by what he or she learned at home. Families are united and separated because of divorce, death in the family, moving, job requirements, etc. Unlike a lot of unexpected changes in life like divorce (Vaughan, 1986), illness (Glaser & Strauss, 1965, 1968, 1971) or death of a loved one (Lofland, 1978), going to college is one of the most positive life transitions that is anticipated and poses new challenges to all the family members.

Going to college is more than just "going back to school." The departure is a significant milestone in the life of a family and ushers in a time of separation and transition, requiring an adjustment on the part of parents, the college-bound youngster, and the whole family. This separation is often harder on young adults as they are the ones

who move out to a new place and have to learn to be independent in making decisions, especially those related to careers. This is also the time when young people have to balance their present with the past. They often seek to develop new social networks while also maintaining communication and affection with their families. Approximately 1.7 million students, or 63.3% of the high school graduates of 2000, were enrolled in colleges or universities and the number of students attending college is increasing (Goodman, 2001).

When looking at some of the studies done on transition to college, one can find that researchers have used a number of synonyms for this term. Vaughan (1986) called the anticipation of the move from home to residential college as "sociology of transition." Chudacoff (1989) talks about this stage as "coming of age moment," partly because it is anticipated and partly because it occurs right after high school. Researchers (Holmstrom, Karp & Gray, 2002) have associated this phase with the uncertainty, fear and anxiety that high school seniors have before and during the move. They found that these students were overly concerned about getting laundry done, managing daily time, budgeting money, establishing friendships, and renegotiating family ties.

This renegotiation of roles and communication depends a lot on the family communication patterns that existed at home. But one has to first understand what a family means to today's youth. Baca and Eitzen (1996) defined the traditional family as "middle-class, monogamous, father-at-work, mother-and-children-at-home family living in a one-family house." With time non-traditional families (Baca, et al., 1996) formed, which included units of cohabiting couples with or without children, single parents, childless couples, families with working moms, and even blended families of remarriage.

The traditional communication patterns have changed to include the other family members who are not living in the same place but play an important role in daily lives. For example, some people talk to their birth mothers even though they live with their adopted parents. In the same manner stepsiblings are constantly in touch with their birth mothers or fathers and often visit them too. Hence, communication with family members plays an important role in the lives of today's youngsters.

With the expanding definition of family, family communication is being influenced by technology. Technological breakthroughs have created fundamental changes in the ways one communicates and relates to others. The new forms of communication that have surfaced with the passage of time and changing needs have, each in their own way, influenced society dramatically. Gutenberg's printing press in the 15th century and the advent of radio and television five centuries later triggered a wave of knowledge dissemination (10 things teens do online, 2002).

The influence of technology can be clearly seen with the use of telephones. The dominant use of telephone was found to be for social communication (Dimmick, Sikand, & Patterson, 1994). Among residential subscribers, the modal telephone call is a pair wise conversation between friends or family who are located geographically close to each other and who call each other to stay in touch. (Kraut & Mukhopadhyay, 1999) Dordick and LaRose (1992) had a national sample of households record to whom they talked and why. About two-thirds of residential calls were made to family and friends.

Like telephone, the Internet's value for conversation was under-predicted (King 1997, Leiner, Cerf, Clark, Kahn, Kleinrock, Lynch, Postel, Roberts, & Wolff, 1997). In the late 20th century, the Internet emerged as a major technological change in

communication patterns and soon may become the household's "information superhighway." The Internet began as a robust data network; e-mail quickly became the network's most popular service, used by workers to collaborate on projects and to trade notes and gossip, and just to chat (Leiner et al. 1997, Sproull and Kiesler 1991, Sterling 1993). Alternatively perhaps, the Internet could become a basic interpersonal communication technology in the home, like the telephone.

According to May 2003, measurements from Nielsen/NetRatings, an authoritative online source for information on Internet demographics and trends, there are more than 253,054,814 people using the Internet. The Internet made it to the 50 million-person audience mark in just 4 years; something that radio did in 38 years and television in 13 years (US Department of Commerce, 1998). The advent of universal, international, interconnected networking or the Internet has produced an interacting conglomeration of virtual communities unbounded by geographical limits (Gould, 1995).

October 10, 2001, marked the 30th anniversary of the first e-mail message (Festa, 2001). Today more than half of all Americans use e-mail for an average of a half-hour each day, according to a recent report by Forrester Research (Festa, 2001). Another research company, Jupiter Media Metrix, predicts that by 2006, 140 million Americans will be "active" e-mail users, up from 87 million this year (Festa, 2001). E-mail is an important method of communicating and developing relationships. Of all the methods for developing relationships on the Internet, it is the most common and perhaps the most powerful (Suler, 1997). Unlike chat rooms, instant messaging, avatar communities, blogs, or other online environments, e-mail is easy to use and people find it familiar and safe because is it is almost like writing letters. E-mail communication creates a psychological

space in which pairs of people or groups of people interact. It creates a context and boundary in which human relationships can unfold (Suler, 1997).

Today, millions of people use e-mail daily, both professionally and personally. E-mail has affected every aspect of human communication, from dating to conducting business and even to conducting war. It is also a way to transport the goods and services of the 21st century: ideas. What railroads were to the 19th century and what airplanes were to the 20th century, e-mail is to the 21st (Festa, 2001). Teenagers manage to spend a lot of time on the Internet even though they have a busy schedule of school, homework, sports, SAT preparation, part-time jobs, TV and video games. In a report by Advertising Age (2003) on *"*10 things teens do online" it was found that teens spend more than 50% of their Internet time on sending or receiving e-mail messages. The rest of the time was divided among chat, searching for information for homework, surfing, online games, music, downloads, shopping and instant messaging. Teenagers have a special relationship with the Internet and it is an integral part of their lives. Hence, this medium plays an important role as a medium of communication and source of information.

Purpose of the study

Although a significant amount of research about family communication has focused on traditional media choice and use, and even on new media, these studies have either neglected the Internet or were conducted prior to its recent popularity. A number of researchers have studied Internet content (McLaughlin, 1996), policy (Kahin, 1997; McChesney, 1996), community and culture (Baym, 1995; Jones, 1995, 1997; McLaughlin, Osborne, & Ellison, 1997, Rheingold 1993; Watson; Wise, 1997), and

communication structure (Jackson, 1997). The role of computer-mediated communication is constantly undergoing changes because of the large number of uses to which it can be put. From a network for sharing information, to sending instant messages, to help searching for articles from journals to sending e-mail to Congress representatives, computer-mediated communication can take on many roles. It should also be noted that with the number of features, it is difficult to find literature on any one aspect.

A larger number of studies have been done on the computer medium itself rather than specifically on the Internet, and hence it is important to understand the definition of computer-mediated communication. Computer-mediated communication is "synchronous or asynchronous electronic mail and computer conferencing, by which senders encode in text messages that are relayed from senders' computers to receivers"' (Walther, 1992, p. 52). CMC has profound effects on how people communicate (Fulk & Ryu, 1990; Williams, Rice & Dordick, 1985) and has extended and enhanced face-to-face interactions (Cathcart & Gumpert, 1985).

To do an in-depth review of literature on computer-mediated communication is beyond the scope of this research. There is a large amount of literature on the Internet (Lee, 1999) and e-mail (Garton & Wellman, 1995). Writing to strangers (Parks, Malcolm & Floyd, 1996) and Internet dating (Suler, 1997) are the most concentrated areas in e-mail literature. The bulk of the literature concentrated on how this medium has helped in developing new relationships (Suler, 1997) and there is not much research about how individuals use e-mail to communicate with people they already know, be it relatives, friends or family. Thus, this topic of using e-mail to communicate with family and friends is an important area and will help determine the nature and uses of communicating to

family and friends and the role that e-mail plays in developing existing relationships.

This study on the role of computer-mediated communication in the development of relationships among family and friends will help us understand if there is any difference in adapting to new technology with regard to the family communication patterns that existed prior to the adolescent's transition to college. It is also essential to understand if there were any perceived changes in relationships due to the new technology being used.

The purpose of this study is to understand the emerging family communication patterns among young adults and the influence of technology. A discussion of the relevant literature focuses on family communication patterns and technology and its impact.

CHAPTER II

LITERATURE REVIEW

This chapter will give a summary of the literature review relevant to this topic. There are two main sections in this chapter: Family communication patterns (FCP) and technology in family communication.

Family Communication Patterns

In the early 1970s family communication pattern studies revolved around mass communication and use of new media (Abel, 1976; Chaffee, 1977; Chaffee, McLeod, & Atkin, 1971), political development (Meadowcroft, 1986), anticipatory socialization (Sheinkopf, 1973), and source-message orientation (Stone & Chaffee, 1970). Family communication patterns (FCP) is one of the few concepts that originated in the field of communication, unlike some others that have roots in psychology. McLeod and Chaffee (1972) developed family communication patterns to explore perceptions of family norms, focusing on how a child's communication environment facilitates his or her view of social reality. The underlying assumption was that our attitudes, values, and beliefs influence how we interpret phenomena in the social world, and many of these ideas originate within the family system. McLeod et al. (1966) connected family interpersonal communication patterns and media research. They assumed that the family's interaction patterns would form the child's "communication style." The researchers identified two general dimensions of family interactions: socio-oriented and concept-oriented. In socio-oriented dimensions children are taught to avoid disturbances in parent-child relations (at the expense of the child's own viewpoint). The concept-oriented dimension pertains to

child-idea relations and is characterized by families in which the child may express his or her ideas freely and is exposed to contrasting ideas.

Conversation-orientation, originally labeled concept-orientation, (McLeod & Chaffee, 1972) describes the degree to which family members are encouraged to openly discuss a wide array of topics. The absence of strict limitations regarding topics or time spent talking about them allows families high in this dimension to interact spontaneously on frequent occasions. Families low in conversation-orientation (originally labeled socio-orientation) interact less frequently and only discuss a few topics openly (Koerner & Fitzpatrick, 1997).

Psychologists have also studied parenting control and have termed this as authoritative, authoritarian and permissive (Baumrind, 1966). The permissive parents are nonpunitive, acceptant, and affirmative towards the child's impulses, desires and actions. The idea behind this is to permit the child to be self-regulated, free of restraint, and aware of the reasons for parental rules. Authoritative parents direct the child's activities in a rational manner. The child is allowed verbal give and take and parents also try to explain the reason behind policies and conduct. On the other hand, authoritarian parents try to shape, control and evaluate the behavior and attitudes of the child in accordance with a strict standard of conduct. They believe that children should do as they are told, without regard for understanding of the reasons for parental rules.

Looking at the family control patterns, many scholars have presumed that family communication patterns are stable; others argue that such patterns are subject to change. For example, McLeod and Chaffee (1972) mentioned that they would expect to find changes during pivotal junctures in a child's life, including beginning college, taking a

permanent job, and getting married. A first-year student in college may be presented with alternative values for the first time, which the authors suggest may influence the student's interaction patterns and the structure of those communication patterns.

In her study on family communication patterns and political development, Meadowcroft (1986) emphasized that previous researchers have incorrectly viewed family communication patterns as stable structures. She found that most family communication pattern variance occurs before grade 7 and after grade 10, supporting the view that the nature and impact of such communication varies as children mature. Ritchie and Fitzpatrick (1990) also advocate a developmental view, emphasizing that children perceive family communication norms differently as a function of age. These suggestions of fluidity and change support the notion that the transition to college may be an important point of change in family communication patterns.

Most of the existing body of literature on the adolescent's transition to college yields insightful findings in terms of adjustment (Holahan, Valentiner, & Moos, 1994), parental attachment (Berman & Sperling, 1991), and network changes (Shaver, Furman, & Buhrmester, 1984). However, in focusing on psychological issues such as these, limited insight has been gained related to parent-adolescent communication during this transition.

When considering the importance of attachment relationships, the transition to college becomes a critical point to research for several reasons. Described as "the most significant normative separation beyond childhood," (Berman & Sperling, 1991, p. 429) it is usually the first step in the separation process during which the adolescent's goal is to increase independence while maintaining attachment and communication with parents

(Sullivan & Sullivan, 1980). Holahan et al. (1994) point out that life transitions, including the beginning of college, facilitate "a more autonomous and assertive stance toward life" (p. 221). Geographically relocating is a significant component in the launching phase of the life cycle that approximates leaving home permanently (Sullivan & Sullivan, 1980). Another researcher, who looked at family stress, argues that the transition to college may be stressful because it involves tasks such as taking admission tests, narrowing the list of potential schools, getting finances arranged, and waiting for college decisions (Anderson, 1990).

Although parental attachment remains unchanged for commuter students, it decreases throughout the first semester for residential students. This finding can be better understood with Shaver et al.'s (1984) observation that the average first year student is so preoccupied trying to cope with the adjustment that relationships with family and pre-college friends are more or less forgotten for a period of time.

An important question is whether there is any difference in communication patterns among students residing at home and students who have moved out. Anderson's (1990) observation that daily communication patterns and established roles are not expected to be as disrupted when a student continues to live at home as when the adolescent moves out may help us understand this difference. He expected the adolescent's transition into a new setting to increase role confusion and worry about adjusting to a more independent lifestyle.

The studies on conformity-orientation and conversation-orientation dimensions reliably distinguish the communicative behavior of family members (Chaffee, McLeod, & Atkins, 1971; McLeod & Chaffee, 1972). In general, conformity-orientation is

positively associated, and social-orientation negatively associated, with harmonious social relationships (Ritchie, 1991). Conversation-oriented families tend to produce children who possess better social skills, problem-solving skills, and leadership ability than families low on this dimension (Baumrind, 1968).

Application of the family communication pattern literature to how college students use emerging communication technology to communicate with family members suggests the following two hypotheses:

> H1: The more conformity-oriented the student's family, the more likely it is that the number of e-mail messages sent by the student to parents will match the number sent by parents to the student.
>
> H2: The more conversation-oriented the student's family, the greater will be the number of total e-mail messages exchanged between the student and parents.

Technology in Family Communication

In 1993 the American government turned an academic and military computer network into the "information marketplace": the cyberspace that today is the connecting tool of millions, the information superhighway, and the social community of the twenty-first century (Na-hyun, 2000).

Today the fastest growing computer-mediated communication technology is the Internet (December, 1995), and although the Internet has been operational for quite some time, home use has ballooned substantially in the last five years. Prior computer-mediated communication research focused on organizational settings or interactions (Rice, 1993; Steinfield & Salvaggio, 1989; Walther & Burgoon, 1992) or political computer bulletin

boards (Garramone, Harris, & Anderson, 1986). Similarly, other researchers have explained uses of communication channels by examining various message channels (Perse & Courtright, 1993), television viewing motives (A. Rubin, 1983), videocassette recorders (Rubin., & Bantz, 1989), computer-mediated communication (Walther & Burgoon, 1992), and electronic mail (Rice, 1993; Steinfield et al., 1989). Collectively, these studies provided support that technologies have influenced interpersonal communication.

The Internet is a worldwide broadcasting capability, a mechanism for information dissemination, and a medium for collaboration and interaction between individuals and their computers without regard for geographic location. (Leiner, et al. 2000). Interactivity is an assumed attribute of interpersonal communication (Morris and Ogan, 1996). Steuer (1992 p84) defines interactivity as "the extent to which users can participate in modifying the form and content of a mediated environment in real time." Interactive and informational retrieval dimensions characterize new communication technologies (such as the Internet).

People find communication through e-mail to be relatively spontaneous and interactive, a form of written conversation (Sproull & Kiesler 1991). Senders can tailor their messages to their recipients, taking into account their prior interactions and the nature of the relationship. Their access to the previous written messages helps support their memory of the ongoing interaction. The conversational and relationship-oriented attributes of e-mail have by now engaged millions of people. As the online services have discovered, people love to talk with others, and e-mail provides a new way for millions of them to do so. E-mail links people and reinforces relationships (Kraut et all. 1999).

One reason that electronic mail use may be more popular and stable than Web use and may lead to longer survival on the Internet is that the messages people send and receive by e-mail sustain dialogues and ongoing relationships with family, friends, and coworkers. Participants (Kraut et all. 1999) described a variety of people with whom they had relationships: grandparents, members of the soccer team, teachers, and people they met in chat groups. Even in the absence of standing relationships, dialogues have an obligatory character that helps to make them self-perpetuating. It is considered rude to fail to respond to a message.

One characteristic of this interactive medium is its ability to facilitate two-way communication (Garramone, Harris, and Anderson 1986). With the rapid rise of the Web as a commercial medium, interactivity emerges as a unique characteristic distinguishing the Internet from other traditional media because it provides opportunities for mutual discourse (Ball-Rokeach and Reardon 1988; Burgoon, Bonito, Bengtsson, Ramirez, Dunbar, and Miczo, 2000; Hanssen, Jankowski, and Etienne 1996) or opportunities for feedback (Newhagen, Cordes, and Levy 1995). "Interpersonal interactivity" (Massey and Levy 1999) allows people to communicate with others on the Internet.

But it is also important to understand whether the users of this medium consider it interactive. Interactivity should be measured in terms of users' perceptions or experiences of interactivity (Lee, 2000). The Internet provides for "interpersonal interactivity" by allowing individuals to communicate with each other through tools such as chat rooms and bulletin boards (Massey and Levy 1999). The Internet provides users more control with different navigational tools, unlike the other traditional media (Burgoon et al. 2000;

Hanssen, et al 1996; Huhtamo 1999; Milheim 1996; Murray 1997; Preece 1993; Tan & Nguyen 1993; Trevino & Webster 1992).

Newhagen et al. (1996) appear to be the first who proposed the concept of perceived interactivity. Newhagen (1996) conceptualized perceived interactivity based on efficacy which is "a two-dimensional construct: internally-based self-efficacy and externally based system efficacy." For an Internet user, internally-based self efficacy can be translated into his or her perceived control over where she or he is and where she or he is going, while externally-based efficacy can be rendered into his or her sense of how responsive the Internet is as a system to his or her actions. The Internet often provides users with more content and more navigational tools than do traditional media. And hence it is important to understand Measures of Perceived Interactivity (MPI) (Hwang & McMillan, 2002). In particular, two of the measures of perceived interactivity are important to this study: real-time communication, which focuses primarily on two-way communication, and engaging, which focuses primarily on control.

> H3: The more conformity-oriented the student's family, the higher the student is likely to score on the control dimension of perceived interactivity when considering e-mail exchanges with parents.
>
> H4: The more conversation-oriented the student's family, the higher the student is likely to score on the two-way communication dimension of perceived interactivity when considering the e-mail exchanges with parents.

Teenagers are among the Internet's most ardent users, with half saying the Internet helps relationships with friends and three-quarters using instant messaging to keep up with friends (Lenhart 2001). At the other end of the age spectrum, senior

citizens—a group with a lower Internet penetration rate than other age groups *and* a group with smaller social networks—are as likely as other Internet users to say the Internet improves family connections. Indeed, the average senior Internet user is more likely to go online on a given day than other Internet users (Fox 2001).

Horrigan and Rainie (2002) found that *all* types of Internet users—from the most veteran to new users—experience a sharp increase in sending e-mail to family and friends with serious content (e.g., seeking advice from others or sharing worries). Most Internet users maintain a positive perspective on e-mail's utility for keeping up with family and friends. A majority of those who e-mail family and friends say it helps improve connections and a study in March, 2001 found significant growth in family e-mail since March, 2000. Many study participants reported that much of the growth was because of increase in e-mail to extended family members (such as cousins) (Horrigan, 2002).

> H5: The greater the total number of e-mail messages that a student sends in an average week, the higher is likely to be the percentage of e-mail messges sent to parents.

Hence this study will test the relationship between family patterns and the influence of technology.

CHAPTER III

METHODS

A survey design was be used to address the hypotheses. The primary variables family conformity patterns, family conversation orientation, and several types of e-mail use (family, personal, past, and present) were examined among a sample of college students. Following is a summary of participants and procedures, and a copy of the questionnaire is attached in the appendix.

Participants

A sample of 202 first and second-semester students enrolled at the University of Tennessee was surveyed at convenience. To get students from the various departments the data were collected from general education classes that have large number of students from a mix of departments. The goal was to obtain 200 total participants in the age range of 18 to 22. Inclusion was based on age and number of semesters in school.

Procedures

The survey was collected before or after class. The researcher administered the survey and students did not receive any credit for the survey. Students were not forced to complete the survey, they were asked to volunteer.

Measures

The questionnaire had two sections: one with the Revised Family Communication Patterns instrument (RFCP; Ritchie & Fitzpatrick, 1990) and the other that determined

the communication patterns and mode of communication between students and their family members. This questionnaire was collected in-class with the permission of the instructor.

RFCP is utilized to form a 26-item questionnaire. On a Likert scale of 1 (Strongly disagree) to 7 (Strongly Agree), participants were asked to rate their communication with parents or primary caregivers with whom they grew up. The RFCP measures two dimensions of family communication: conversation and conformity orientation. Conversation orientation is defined as a family climate where all family members are encouraged to participation freely in interaction about a wide array of topics. Conformity orientation is defined as a family climate that stressed homogeneity of attitudes, values, and beliefs. The RFCP is based on McLeod and Chaffee's (1972) Family Communication Pattern instrument, but represents advancement over it in that it better labels and operationalizes the underlying dimensions of conformity and conversation orientation (Fitzpatrick & Ritchie, 1994). Fifteen of the survey items measure a family's perceived conversation-orientation, and 11 assess conformity-orientation.

Family Communication Patterns (FCP) has been used in the field of communication for over more than 25 years. Originally conceived by McLeod and Chaffee (1972), family communication paradigms were posited to vary along two dimensions, labeled socio-orientation and concept-orientation. Ritchie (Ritchie & Fitzpatrick, 1990; Ritchie, 1991) has recently relabeled and re-conceptualized FCP's two underlying dimensions to enhance their conceptual clarity, and this revision is known as revised family communication patterns (RFCP). His empirical work has revised the paper-and-pencil instrument designed to measure FCP and has demonstrated the

instrument's internal and test-retest reliability and its validity (Ritchie, 1991).

Descriptive Statistics

Demographic Overview

Data were collected from a total of 221 undergraduates at the University of Tennessee in various math, English, advertising and psychology classes. Of the 221 students who participated, 43 percent (n=95) were males and 57 percent (n=126) were females. The youngest student was 18 years old and the oldest was 37. The mean age was 19.83 (SD=2.4) and the median was 19.00. There were 202 students (91.4 percent) in the age range of 18 to 22 and 19 students in the range of 23 to 37.

Six students did not indicate race, whereas 176 (79 percent) were white, and relatively few identified themselves with a minority race. The average number of semesters of college attended by the students was 3.13 (SD=2.11) and the median was 2.00. Fifty-seven percent (n=125) of the students lived on campus, 26 percent (n=58) lived off campus without parents, 14 percent (n=31) lived with their parents, while 7 students lived with their spouses. Fifty percent (n=111) of students were not employed, while 45 percent (n = 100) worked part time. Ten students worked full time.

Selected Sample

Because the classes from which the sample was drawn were often a mix of upper- and lower-division students, it was appropriate to select the students who best fit the profile of this study (younger with less college experience). Age and semesters in school were the most relevant selection criteria; therefore students above the age of 23 were not used in this study (mean age of selected sample = 19.24, median = 19, sd = 1.06). Also,

the students who had more than six semesters of college education were omitted from the studied group (mean number of college semesters in selected sample = 2.95, median = 2, sd = 1.85). The total sample size for this more focused group was 202 students. Table 1 summarizes the demographic profile of the selected sample.

Key Variables

This section provides detail on the variables used to test the hypotheses. They are family types, MPI scales, calculations of e-mail sent and received, and communication modes.

Family Types

This study revolves around the family communication patterns and hence the first step was to group the sample into conformity-oriented and conversation-oriented family types. The revised family communication pattern scale has 26 questions, of which the first 15 deal with the conversation-oriented family type and the last 11 with the conformity-orientation. Reliability analysis was done for scales. Coefficient alpha was .94 for the conversation-orientation scale and .81 for the conformity-orientation scale, and neither scale could be significantly improved by removing any items. Thus, two separate scales were created.

To determine the orientation for a given student, the difference between the two scales was calculated. Those students who had a difference of less than .50 in their scores (N here) were eliminated from this particular analysis because those students' families could not be clearly identified as either conversation- or conformity-oriented.

Table 1. Demographic Summary of Selected Sample (N=202)

Variables	Categories	Frequency	Percent
Sex	Female	115	56.9
	Male	87	43.1
Residential Status	On campus	124	61.4
	Off campus without parents	46	22.8
	Off campus with parents	30	14.9
	Others	2	1.0
Work Status	Full-Time	7	3.5
	Part-Time	92	45.5
	Not Employed	103	51.0
Race	White	165	81.7
	African American	16	7.9
	Asian	12	5.9
	Missing	4	2.0
	Hispanic	2	1.0
	German	1	0.5
	Italian	1	0.5
	Lebanese	1	0.5

All other students were coded as either coming from conversation-oriented or conformity-oriented families based on the scale on which they scored highest.

There were 131 conversation-oriented family and 35 conformity-oriented family types in the selected sample. For 36 students the mean difference between the conversation and conformity scale was less than .50. Because of the unequal numbers, a t-test was done to test the validity and normality of the two types of families based on communication patterns. As shown in Table 2, significant differences were found between the two family types based on their scores on conversation and conformity scales. The two scales were negatively and significantly correlated ($r = -.168$, $p < .05$). Figure 1 shows the mean conversation and conformity scores for the two family types.

Measures of Perceived Interactivity Scale (MPI)

The MPI scale has two sections, one on the two-way communication dimension and the other on the control dimension. The first seven items of the scale determined the two-way communication dimension. Reliability analysis for these seven items resulted in an alpha of .89 and the scale could not be significantly improved by removing any of the items, therefore the two-way communication scale was computed by taking a mean of these seven items. The last nine items determined the control dimension. Reliability analysis for these items resulted in an alpha of .90 and the scale could not be significantly improved by removing any of the items, therefore the scale for the control dimension of interactivity was computed by taking a mean of these nine items.

The mean for the two-way communication dimension was 3.67 (sd = 1.16). The mean score on the control dimension of perceived interactivity was 4.26 (sd = .89). All items on both scales were coded with 1 (item is not at all descriptive of e-mail

Table 2. Family Type and Scores on Conversation and Conformity Scales

Family Type	Frequency	Mean Conversation Scores	Mean Conformity Scores	t
Conversation-oriented Families	131	5.36	3.20	14.05***
Conformity-oriented Families	35	2.96	4.41	-7.12***

*** $p<0.001$

Means computed on a scale of 1-7 where 1 = strongly disagree with an item related to the scale and 7 = strongly agree with a scale item.

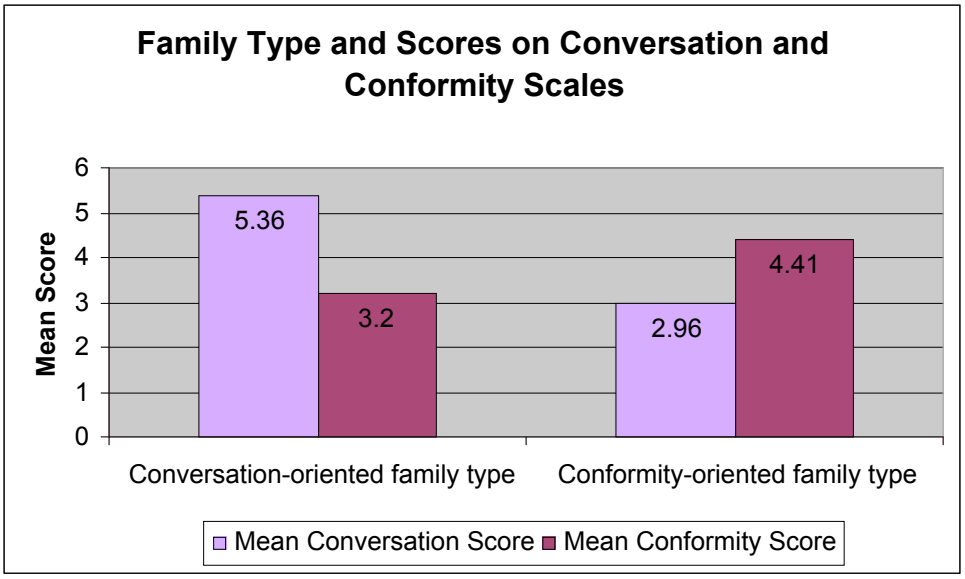

Figure 1. Family type and Scores on conversation and conformity scales

communication with parents) and 7 (item is very descriptive). Two items in the two-way communication scale were reverse coded for analysis: "is primarily for one-way communication" and "can not communicate in 'real time.'" Three of the items on the control scale were reverse coded for analysis: "Is unmanageable," "Doesn't keep my attention," and "Doesn't require me to be active."

E-mail Sent and Received

Participants were asked to indicate total number of e-mail messages sent and received in an average seven-day period. For the hypotheses examined in this study it was necessary to divide e-mail communication into two primary groups: communication with parents and communication with other people. Parents were mother, father, stepparents (if applicable), and adopted parents (if applicable). Other partners were all other family members, legal guardians, people at work, friends, classmates, etc. Table 3 shows the mean of e-mail messages sent and received with parents and others.

Communication Modes

Students were asked to indicate the average number of times in a week that they used phones, letters, e-mail, instant messaging and face-to-face meetings to communicate with parents. The students were also asked to indicate their favorite mode of communicating with their parents. Table 4 shows the summary of the preferences of the students.

Table 3. Summary of E-mail Sent/Received

	Mean Sent	Mean Received
E-mail with Parents	1.54	2.53
E-mail with All Others	8.97	13.09

Table 4. Summary of Weekly Number of Communications with Parents

Mode	All Students Mean	Conversation-oriented Families Mean	Conformity-oriented Families Mean
Telephone	9.91	11.19	6.46
Talk face-to-face	9.44	12.16	2.89
E-mail	3.28	3.34	2.40
Instant messaging	1.86	1.85	0.69
Letter	0.22	0.21	0.29

*p <.05

While rank orders are consistent across family types, students in conversation-oriented families generally seem to communicate more frequently with their parents than do students from conformity-oriented families. Three of the modes of communication were identified as "favorite" ways of communicating with parents. Table 5 summarizes the number of students who indicated that one of these was their favorite way to communicate with parents.

Data Analysis

To test the first hypothesis, which examines the relationship between conformity orientation and the number of e-mail messages that are exchanged between students and their parents, a correlation was run between the e-mail sent and received from parents of conformity-oriented family type students. For the second hypothesis, the conversation-orientation scale was correlated with the total number of messages sent and the total number of messages received.

The third and fourth hypotheses test the level of perceived interactivity and control of e-mail and the likeliness of using e-mail for family communication. To test

Table 5. Summary of Most Popular Modes for Communication with Parents

Mode	All students		Conversation-oriented Families		Conformity-oriented Families	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Telephone	116	57.4	78	60.0	21	61.8
Talk face-to-face	64	31.7	43	33.1	8	23.5
E-mail	20	9.9	9	6.9	5	14.7

these hypotheses, students were asked to report their perceptions of the interactivity and control of e-mail and the likelihood of their using e-mail for family communication. A correlation was run between the two dimensions and the family type.

T test analysis was conducted to compare the perceived interactivity of e-mail with usage by students and also to the family orientation type. McMillan and Hwang (2002) proposed three different scales that can be used as measures of Perceived Interactivity (MPI). The first scale for Real-Time Conversation includes seven items that focus on communication and is most closely associated with the concept of two-way communication. These seven items will be used in the current study. Also there will be nine other items that will test the control dimension of interactivity.

The fifth hypothesis seeks to find out if there is a relationship between e-mailing to parents and overall usage of e-mail. A correlation was run between number of e-mail to parents and total e-mail sent to others (non-family).

The last few questions are for descriptive information: age, sex, semesters attended, residence, race and work status. Included in the analysis was current residential status, either living at home with parents or living alone (without family).

CHAPTER IV

FINDINGS

This chapter presents the findings of the survey. The first section discusses results of the hypothesis testing. The final section provides some additional insight into responses to the open-ended question that explored reasons for favored family communication modes.

Hypothesis Tests

Hypothesis 1

The first hypothesis predicted that the more conformity-oriented the student's family, the more likely that the number of e-mail messages sent by the student to parents will match the number sent by parents to the student. To test this hypothesis, the first step was to calculate the difference between number of messages sent to all parents and those received from all parents. The new computed variable was correlated with the conformity-orientation scale. No significant correlation was found between family type and mean difference in number of messages sent and received ($r =. 02$, $p >.05$). Therefore hypothesis 1 was not supported.

However, an interesting pattern was found in broader analysis of "matching" among parents and students. Looking at the sample as a whole, there was a significant difference between the mean number of messages sent to parents (mean = 1.54) and messages received from parents (mean = 2.53); thus students sent significantly fewer e-mail messages than they received from parents ($t = -5.77$, $p <.001$). As the correlation,

which was used for testing hypothesis 1 indicates, this difference in sending/receiving patterns is not affected by the conformity-orientation of the family.

Hypothesis 2

The second hypothesis predicted that the more conversation-oriented the student's family, the greater would be the number of e-mail messages exchanged between the student and the parents. This hypothesis was tested in two ways. First, the conversation scale was correlated with students' estimated total number e-mail communications with parents (from questionnaire item 3). The second test was to correlate the conversation-orientation scale with the total number of message sent and the total number of messages received (from questionnaire item 1). As shown in Table 6, the only significant correlation between the conversation scale and estimates of e-mail volume was with messages sent. Thus, hypothesis 2 was partly supported.

Table 6 also shows that, in general, there was a strong correlation between messages sent and received. Table 7 compares means of messages sent and received for students from both conversation-oriented and conformity-oriented families. Figure 2 shows the e-mail exchanged by both family types.

Table 7 reveals three notable trends. First, the average numbers of sent and received messages tend to be higher for conversation-oriented families than for conformity-oriented families even though the differences are not statistically significant. Second, in both conversation-oriented and conformity-oriented families students report that they receive significantly more messages from their parents than they send.

Table 6. Summary of Total E-mail Messages between Students and Parents

	Conversation scale	Estimate of total exchanges with parents	Message sent to all parents	Messages received from all parents
Conversation scale	1.00			
Estimate of total exchanges with parents	.11	1.00		
Messages sent to all parents	.14*	.80**	1.00	
Messages received from all parents	.05	.81**	.75**	1.00

* p < .05, ** p < .01

Table 7. E-mail Messages between Students and Parents and Family Orientation

	Conversation-oriented Families Mean	Conformity-oriented Families Mean	t (for conversation/ conformity comparison)
Messages sent to all parents	1.69	1.29	.93
Messages received from all parents	2.69	2.20	.73
t (for sent/received comparison)	-4.73***	-2.40***	

*** p < .001

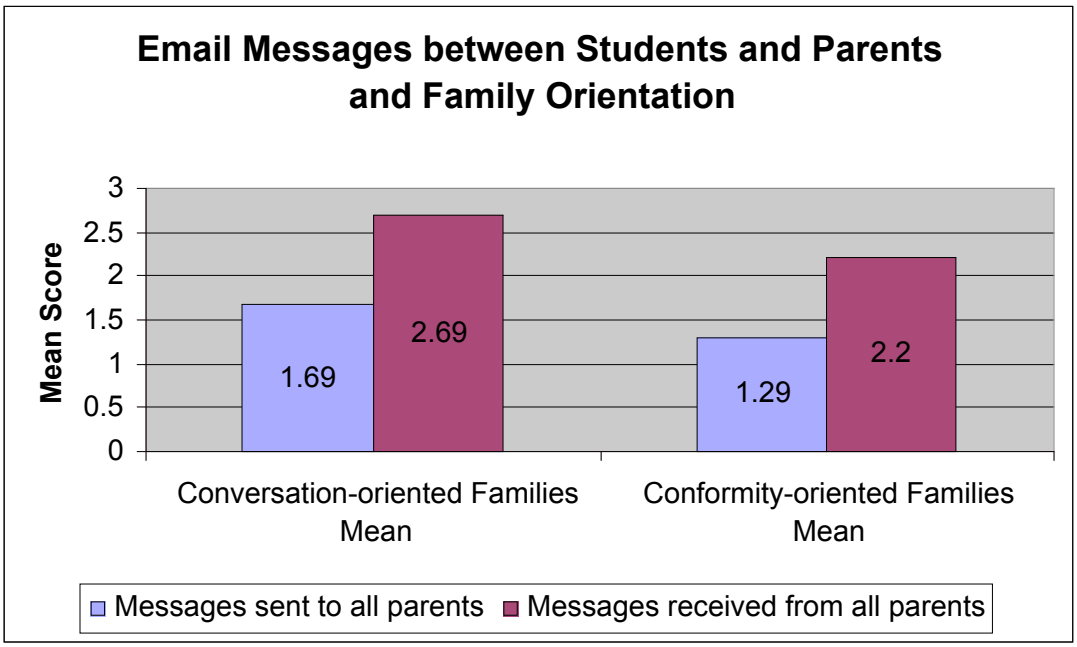

Figure 2. Family Type and Scores on conversation and conformity scales.

Finally, Table 7 also shows that the difference between sent and received messages tends to be a little higher for conversation-oriented families (average of 1.0 more messages sent by parents) than for conformity-oriented families (average of .91 more messages sent by parents). It might be interesting to study this further and look for deeper and significant relationships.

Hypotheses 3 and 4

The next two hypotheses dealt with family type and perceived interactivity when considering e-mail exchanges with parents. Hypothesis 3 predicted that the more conformity-oriented the student's family, the higher the student is likely to score on the control dimension of perceived interactivity. Hypothesis 4 predicted that the more conversation-oriented the student's family, the higher the student is likely to score on the

two-way communication dimension of perceived interactivity. Table 8 reports correlations between the scales for family orientation and dimensions of interactivity.

No significant correlations were found between the conformity-orientation scale and the control dimension of perceived interactivity. Thus, hypothesis 3 is not supported. No significant correlation was found between the conversation-orientation scale and the two-way communication dimension. Thus, hypothesis 4 is not supported.

Table 9 provides more insight into the relationships between the interactivity scales and the family orientations. In both family types, students scored higher on the control dimension than on the two-way communication dimension. Conversation-oriented families scored slightly higher on both of the interactivity dimensions than did conformity-oriented families, but those differences were not significant.

Hypothesis 5

The fifth hypothesis predicted that the greater the total number of messages that a student sends in an average week, the higher would be the percentage of messages sent to parents. For testing the fifth hypothesis, a correlation was run between the total e-mail sent by the students and the total messages sent to parents. As illustrated in Table 10, the predicted correlation was found only among conformity-oriented families. Thus hypothesis 5 was partially supported.

Favorite Mode of Communication

In addition to the questions designed to test the hypotheses of this study, students were asked to indicate their favorite tools for communicating with parents and provide qualitative information about why they preferred those tools. As shown earlier (Table 5),

Table 8. Correlations of Family Orientation and Interactivity Dimension Scales

	Conformity-orientation Scale	Conversation-orientation Scale
Control Dimension	.122	.118
Two-way Communication Dimension	-.026	.087

Table 9. Summary of Total E-mail Messages between Students and Parents

	Conformity-oriented Families Mean	Conversation-oriented Families Mean	t (for conversation/ conformity comparison)
Control Dimension	4.22	4.33	.60
Two-way Communication Dimension	3.45	3.75	1.23
t (for control/two-way comparison)	5.69***	5.74***	

*** $p < .001$

Table 10. Correlation between Total E-mail Sent and E-mail Sent to Parents

	E-mail Sent to Parents
All students total sent	.033
Conversation-oriented families total sent	-.014
Conformity-oriented families total sent	.459**

** $p< 0.01$

e-mail ranked third in popularity as a tool for communicating with parents. As shown in Table 11, students who selected e-mail as their favorite way of communicating with parents sent more e-mail messages in an average week to parents than did those who preferred telephone or face-to-face conversations. This was true for the group as a whole as well as for both conversation-oriented and conformity-oriented families.

Additional insight into family communication can be gained by examining qualitative responses to the question about why a particular mode of communication is the favorite tool for communicating with parents. The following themes were identified in students' responses: importance of emotions and body language, easy and convenient, personal, cheap, and multitasking.

Importance of Emotions and Body Language

When looking at people who preferred face-to-face communication we find that they do so because they feel that they can see the emotions of their parents and hence it is easy for them to have a conversation and to interpret meanings of the things that are not being said.

There are some people who like phone and face-to-face but when they compare phone and face-to-face, they prefer a mode where they can see and feel the emotions of their parents. Face-to-face communication provides instant feedback.

One of the students wrote,

> I prefer face-to-face communication because you can tell how people are really feeling by facial and body language.

Table 11. E-mail Sent and Favorite Tool for Communicating with Parents

	Mean Message Sent to Parents in Seven-day Period		
Favorite Tool	All Students	Conversation-oriented families	Conformity-oriented families
E-mail	4.05	4.44	4.20
Telephone	1.66	1.92	.95
Face-to-Face	.61	.74	.50
ANOVA	$F = 11.77$, $p < .001$	$F = 5.79$, $p < .01$	$F = 9.20$, $p < .01$

Face-to-face communication allows more effective communication for some students because they feel that it gives the opportunity to show facial expression to back up their words. Some students feared this emotion and body language is difficult to handle and that they would prefer to hear it on the phone or read it via e-mail or instant messaging. But in general the students who liked face-to-face communication gave importance to emotions and body language in the communication mode.

Easy and Convenient

Some students preferred e-mail because it was quick, easy to send and not expensive like the monthly phone bill or travel expenses to meet parents. On the other hand, other students preferred phone calls because their parents were paying for the bill and they could carry their cell phones to class and others places. They didn't have to go looking for a computer or travel far to meet their parents. Also, with features like text messaging and voice mail boxes students feel that they can leave messages or receive messages when they or their parents are busy. Free mobile-to-mobile minutes are one of the features that students felt helps them constantly keep in touch with their parents.

When students compare phone to e-mail they feel that phone calls are not intimidating and that students do not have to think too much when talking on the phone but when writing e-mail they have to think more. For some, students it is hard to talk face-to-face and so they prefer phone or e-mail (even when they are living with their parents).

One of the students wrote

> My dad gives me more grief face-to-face and so I prefer using phone when talking to my dad. My mom is pretty reasonable and so it is easy to talk to her face-to-face.

Another student writes

> Because I can say everything I need or want to say in less time than writing out an e-mail to them. I only like e-mail method if I am in trouble.

Personal

Some of the students feel that because they don't live with their parents any more, whenever they get a chance to meet face-to-face, it becomes more personal and emotional.

One of the students writes,

> I get to be in 'real' conversation and the discussions can be much more in depth and best to get and give information when compared to other modes of communication.

Students consider phone calls equally personal when compared to e-mail because they can hear their parents' voices, and this is like almost like being with their parents at home.

One student writes

> I actually enjoy being able to hear their voice and be able to discuss day-to-day things with them. Phones give opportunity for actual 'conversation' when not living at home.

Another student writes

> A quick hello on the phone and have a great day, allows you to hear their voice rather than read it on a computer screen. It doesn't restrain communication to only when you're checking your e-mail.

Time spent with parents is special and natural. Face-to-face is much easier and not complicated, but many students are not able to meet their parents regularly. With the trends like spring break (going to a vacation spot) and summer study abroad programs,

students feel that with time the visits home decreases, and so when they do get a chance to go home they prefer having face-to-face communication It is one of the most reliable forms of communication and the easiest way to communicate ideas and feelings.

Inexpensive

Some students consider cell phones to be inexpensive, and for some students parents pay the bills. Hence, when they compare phone calls to face-to-face or e-mail they feel that their investment and expenses are less.

Some of the students said they do not e-mail their parents because their parents do not have computers, and so access to technology is limited. Two or three students mentioned that their parents can access computers only at work or only at home and so only at those times do they e-mail. If it is an important issue, some students feel that they cannot trust just sending e-mail. Some students said their parents do not know how to use computers.

Multitasking

Students who preferred e-mail or instant messaging (IM) felt they could engage in "multitasking" (doing several things at once). Students could do homework, personal work, etc when sending mails or using IM. And some students reported that when they had to sit on the computer longer because of homework or other projects they tended to send more e-mail than they did on other days. Instant messenger's use also depended on for how long they had used the computer.

CHAPTER V

DISCUSSION

Students interact with students, parents, peers, administrators and many others and thus must manage a large amount of communication daily. They also communicate in a variety of ways, from written notices in school to interchanges across the lunch table to the non-verbal message given out during a difficult meeting. There are number of modes of communication, such as cell phones, home phones, face-to-face, e-mail, instant messaging, text messaging and many others. Each communication mode is rated for its importance depending on the situation, relationship, time, effort and related factors. This study on undergraduate students was an attempt to study the communication behavior that students develop after moving out of the family.

Hypotheses 1, 3 and 4 were not supported at all, while 2 and 5 were partially supported. The hypotheses tried to predict some general trends based on the literature review. But the first thing that has to be understood is the fact that all the relationships mentioned in the literature were before the Internet and cell phones came into play. Most of the studies highlighted and predicted the effect of mass media like television, radio, etc. But what the literature did not directly talk about was how family communication patterns directly affected communication using the Internet and e-mail, which is unlike other media. Cell phones are a recent boom and have changed a lot of predicted reactions.

Looking at the family types, we see that they are at least 30 years old and hence it is difficult to say that all families still fit into those two categories. This research had a few people who could not be placed into one of the above-mentioned categories thus one must question whether the revised family communication pattern is still applicable in

today's families. Further study is needed into evolving family communication patterns. Have new categories emerged or if the distinction between the two groups have reduced or changed?

In this study we find that the relationship with family type and communication pattern using e-mail is not as expected. This may be because the Internet is as much a mass medium as a personal one. Students and families are still adjusting to this new medium and haven't categorized it into any of the traditional media.

The other reason for data not supporting the hypotheses could be because of the sample itself. The sample was very small and had been away from home for different periods of time. It is possible that we might see a stronger correlation between communication patterns and family types in a sample of younger students who have more recently arrived at college. With time, students are influenced by other students, friends, work environment and campus life.

But the data do reveal a lot about the students and their pattern of communication. Students receive more e-mail than they send from all their e-mail partners. Conversation-oriented families in general exchanged more e-mail messages. This could mean that there is more exchange occurring in conversation-oriented families than conformity-oriented families.

Even though the difference in e-mail sent to and received from parents was statistically significant, the difference in e-mail for conformity-oriented families were not high, particularly in contrast to the larger differences of conversation-oriented families This could mean that there is some kind of conformity pattern being followed, but this

question should be examined in depth with a larger sample of conformity-oriented families.

The data show that the all students communicate with their parents on a regular basis and that it plays an important role in school life. Students communicate with their parents, siblings, friends, people at work and other family members. E-mail, telephones, cell phones, and writing letters are some of the modes that are commonly used for communication.

It is notable that the sample size for the two family types (conversation- and conformity-oriented) was not large, but differences were found between the two groups. Conversation-oriented families in general communicated more with their parents. The average number of calls, meetings face-to-face, e-mail, etc was more than the conformity-oriented families. Also the number of e-mail exchanged in conversation-oriented families was greater. This could be an added or a supplemental mode of communication. Like daily phone calls, e-mail could be routine or habit where the student sends e-mail whenever she or he gets a chance to use the computer.

The mean difference of e-mail sent to and received from parents were not very high for conformity-oriented families. This could mean that the e-mail exchanged between parents and students in conformity-oriented families were almost equal. It also could mean that they preferred to involve or write to their parents only when they are written to or when they needed something.

Students may be are conforming to the patterns at home, like both parents and students writing to each other once a week or once a month. A long-term analysis might reveal that there is a trend in sending or receiving e-mail. It would be interesting to

examine the topics of e-mail between students and their families. And so it may be interesting to study if conformity-oriented family type students define this medium (e-mail) differently than students of the other family type.

Looking at the most popular mode of communication with parents, we find that a higher percentage of students from conversation-oriented families preferred face-to-face, while more of the conformity-oriented students preferred phones or e-mail. This could mean that the conversation-oriented families still believed in sitting down and talking about issues while it was easier for conformity-oriented families to talk on the phone or e-mail.

E-mail messages received were always more than the e-mail messages sent in both types of families and this finding could mean that students in general preferred less involvement with their parents after the transition phase than their parents would like. No matter what the family type, students want more independence and may feel less need to write or report back to their parents. As the literature review tells us, there is a turning point at all major stages of students' life and friends and peers influence the students to break free from their life at home.

The qualitative data suggests that students use e-mail when in trouble or when they need something. And hence students may use e-mail more only for certain issues and for convenience. Unlike parents who may be using computers all day at home or in the office, some students have limited access to computers (during breaks, library or dorms). Students' school and work schedules could also affect the number of e-mail that they send.

It was also found that students received more e-mail than they sent for all partners (family and others). This could be because of the way students and parents may define this medium. It could just be a mode where students get instructions from parents or employers. Students may call their parents, friends, professors or other classmates when they get an e-mail depending on the action that has to be taken because of the e-mail. Unlike the case with cell phones, it is always easier to neglect replying to e-mail immediately or to leave them pending if issues do not seem important. One can send ten e-mail messages at the same time and the student may not receive them for a couple of hours (Internet problems) or else not check e-mail for hours and students may only write one e-mail in reply.

The data also showed that the conformity-oriented students sent more e-mail to parents than to others (family and non family). Maybe for conformity-oriented families this is the primary (favorite) mode of communication. This could also be their way of trying to break away from the conformity. It may also be related to the fact that e-mail does not give them enough opportunity of having a conversational relationship and hence helps them be more conformity-orientated. This limitation could be with the e-mail itself and hence they consider the e-mail as enhancing the conformity (control) in the family. Phones and face-to-face communication are more conversation-oriented media. And so e-mail can be categorized as more of conformity where students are not expected to differ a lot but just have simple one-sided conversation with out too many explanations. Hence we have to go back to the point as to how conformity-oriented students may define this medium.

Further research needs to be done on senior, junior and graduate students to see if there is more communication using e-mail. With time, maybe students learn more about using computers and sending e-mail. Maybe data should be collected only from students sending and receiving e-mail from their parents.

There were very few students from conformity-oriented families and hence more study should be done using data with equal number of family types. A bigger sample size from different universities might help to find students from both types of families.

More and more schools and universities have started using e-mail as their primary mode for communicating with their students and hence it might be interesting to study the change in the attitude towards communication when students come to school for their first semester and how they then use this mode with their parents (if they didn't use e-mail before coming to school).

It is also interesting to see that sixty percent of conversation and conformity-oriented family type's students preferred phones as their favorite mode. This could be because of the boom in the use of cell phones. Also with the cell phone companies trying hard to get students to use their service, they are bringing in new schemes and family talk offers. This has changed how families communicated in the past. Now students and parents talk frequently or else leave voice messages and text messages. This convenience may replace all other modes of communication.

When students described e-mail, phone and face-to-face, they were rating communication in scales of convenience, expenses, personal, importance of emotions and body language, etc. Cell phone may score high in majority of the factors and this might affect the use of e-mail in the near future.

Students like to use different modes of communication depending on the situation, topic and parent (mother or father). And hence it will be interesting to further explore different situations and topics to know more about where all students feel that e-mail is applicable and important.

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APPENDIX

Questionnaire

This questionnaire is being conducted by Shilpa Venkateshwaran for her master's thesis n the College of Communication and Information. The purpose of the study is to find out how college students like you use e-mail to communicate with family, friends, and others. The study is designed to help researchers better understand how the rapidly growing e-mail technology is affecting patterns of communication.

Your participation is voluntary. No information you provide will be linked to you in any way. Data will be reported only in the aggregate. If you have any questions about your rights as a research subject, you may contact the College of Communication and Information research office at 865-974-6651. By completing this survey and returning it to the researcher, you provide your informed consent to be a research subject.

First, think about persons with whom you exchange e-mail. On the first line before each person/persons below, indicate how many messages you SEND in an average seven-day period. On the second line, indicate about how many e-mail messages you RECEIVE in an average seven-day period.

Send	**Receive**	
_____	_____	Mother
_____	_____	Father
_____	_____	Stepmother
_____	_____	Stepfather
_____	_____	Adopted mother
_____	_____	Adopted father
_____	_____	Legal guardian(s)
_____	_____	Grandparents (all grandparents combined)
_____	_____	Siblings (all combined)
_____	_____	Other family members (all cousins, aunts, uncles, etc.)
_____	_____	Friends
_____	_____	Other students who are not close friends
_____	_____	People you work with
_____	_____	Other people (Please specify) _____

Following is a list of ways that parents and children communicate with each other. On the line before each, write the average number of times in a seven-day week that you and your parent(s) communicate in this way. Provide a total number for all parents (mother, father, stepmother, stepfather, etc.) and for all exchanges (example: if you call once and your mother calls once, that is two telephone calls).

_____ Telephone call
_____ Letter
_____ E-mail
_____ Instant messaging
_____ Talk face-to-face
_____ Other (Please specify) _____

Which of the communication tools described in question 2 is your favorite way of communicating with your parents? _____

Briefly describe why the tool you identified in question 3 is your favorite way of communicating with your parents.

Please rate how well each of the following phrases describes your experience in exchanging e-mail with your parents. Circle the appropriate number below using a scale in which 1 = not at all descriptive and 7 = very descriptive.

	Not at all Descriptive						Very Descriptive
Allows back-and-forth communication	1	2	3	4	5	6	7
Is interactive	1	2	3	4	5	6	7
Is primarily for one-way communication	1	2	3	4	5	6	7
Lets us communicate in 'real time'	1	2	3	4	5	6	7
Is interpersonal	1	2	3	4	5	6	7
Let's us have a conversation	1	2	3	4	5	6	7
Can not communicate in 'real time'	1	2	3	4	5	6	7
Has a vareiety of content	1	2	3	4	5	6	7
Keeps my attention	1	2	3	4	5	6	7
Easy to read through the e-mail	1	2	3	4	5	6	7
Is unmanageable	1	2	3	4	5	6	7
Doesn't keep my attention	1	2	3	4	5	6	7
Doesn't require me to be active	1	2	3	4	5	6	7
I get a quick response	1	2	3	4	5	6	7
Lacks content	1	2	3	4	5	6	7
Is easy to control	1	2	3	4	5	6	7

Please indicate how much you agree with the following statements about your family. Circle the appropriate number below using a scale in which 1 = strongly disagree and 7 = strongly agree.

	Strongly Disagree						Strongly Agree
In our family we often talk about topics like politics and religion where some persons disagree where some persons disagree with others.	1	2	3	4	5	6	7
My parents often say something like "Every member of the family should have some say in family decisions."	1	2	3	4	5	6	7
My parents often ask my opinion when the family is talking about something.	1	2	3	4	5	6	7
My parents encourage me to challenge their ideas and beliefs.	1	2	3	4	5	6	7
My parents often say something like "You should always look at both sides of an issue."	1	2	3	4	5	6	7
I usually tell my parents what I am thinking about things.	1	2	3	4	5	6	7
I can tell my parents almost anything.	1	2	3	4	5	6	7
In our family we often talk about our feelings and emotions.	1	2	3	4	5	6	7
My parents and I often have long, relaxed conversations about nothing in particular.	1	2	3	4	5	6	7
I really enjoy talking with my parents, even when we disagree.	1	2	3	4	5	6	7
My parents encourage me to express my feelings.	1	2	3	4	5	6	7
My parents tend to be very open about their emotions.	1	2	3	4	5	6	7
We often talk as a family about things we have done during the day.	1	2	3	4	5	6	7
In our family, we often talk about our plans and hopes for the future.	1	2	3	4	5	6	7
My parents like to hear my opinion, even when I don't agree with them.	1	2	3	4	5	6	7
When anything really important is involved, my parents expect me to obey without question.	1	2	3	4	5	6	7
In our home, my parents usually have the last word.	1	2	3	4	5	6	7
My parents feel that it is important to be the boss.	1	2	3	4	5	6	7
My parents sometimes become irritated with my views if they are different from theirs.	1	2	3	4	5	6	7
If my parents don't approve of it, they don't want to know about it.	1	2	3	4	5	6	7
When I am at home, I am expected to obey my parents' rules.	1	2	3	4	5	6	7
My parents often say things like "You'll know better when you grow up."	1	2	3	4	5	6	7

Question 6 continued:

	Strongly Disagree						Strongly Agree
My parents often say things like "My ideas are right and you should not question them."	1	2	3	4	5	6	7
My parents often say things like "A child should not argue with adults."	1	2	3	4	5	6	7
My parents often say things like "There are some things that just shouldn't be talked about."	1	2	3	4	5	6	7
My parents often say things like "You should give in on arguments rather than risk making people mad."	1	2	3	4	5	6	7

Sex _____ Male _____ Female

For how many **semesters** have you been in college: _____

Age _____

Residence

_____ On campus
_____ Off campus not with parents/guardians
_____ Off campus with parents/guardians
_____ Other _____

Race _____

Work _____ Full time _____ Part time _____ Not employed

Thank you for your time and input. Please return the questionnaire to the researcher.

Vita

Shilpa Venkateshwaran was born and raised in India, where she was formally educated. She pursued and attained a Bachelors Degree in Visual Communication, from Dr. G.R. Damodaran College of Science and a Masters in Advertising and Public Relations from Madurai Kamraj University. In August 2002, Shilpa decided to continue her education by joining the Department of Advertising in the School of Communication at the University of Tennessee, Knoxville to pursue a Master's Degree.