Nonverbal Communication Cues in the Electronic Medium

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NONVERBAL COMMUNICATION CUES IN THE ELECTRONIC MEDIUM

by

Theresa M. Flesher

A Research Project Presented in Partial Fulfillment
Of the Requirements for the Degree
Master of Arts
Language and Communication

REGIS UNIVERSITY
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Electronic Communications Use Survey
ABSTRACT

Nonverbal Language Cues in the Electronic Medium

Nonverbal language cues provide the bulk of meaning in most communication exchanges. There are many possible challenges to receiving and understanding nonverbal language cues, perhaps the challenge with the largest impact is the use of electronic messages as a primary means of communication. First, this author examined nonverbal communication and the possible inhibitors to receiving and understanding cues. Through the use of a survey, it was found that e-mail has become a primary means of communication. Also, there was a relationship between time spent on messages and clarity of messages. Finally, the participants \( n = 178 \) reported that irrelevant messages are a growing problem.
Chapter 1

INTRODUCTION

In business, communication is of vital importance. The majority of corporate knowledge is shared or even created in face-to-face communication. Yet, currently, the majority of communication within a business is conducted by the use of Computer Mediated Communications (CMC; Stamps, 1998). Because the act of communication has evolved notably, even within the last decade, increasingly, the use of paperless communication media has taken the place of the letter and the memorandum. The implications of this trend are far reaching, especially in the business world.

Business staff rely on CMC, or electronic messaging systems such as e-mail more often today, and understandably so (Tompsonks, 2003). A business which once was limited to the local area can now interact on a continental and even global level with little additional effort. However, what is good for economics is not necessarily good for interpersonal communication because the typical nonverbal cues that are meant to help the receiver understand messages are nearly nonexistent in e-mail messages (Domangue, 1977).

Statement of the Problem

The increase in the use of electronic communication media, such as e-mail and text messaging, has resulted in a notable challenge for business staff in the world today. While the use of such media has brought about a global society, the impact upon
interpersonal communication has been noticeable. Predictions of office automation have
for the most part been filled, as communication and interaction are mediated by
computers and the opportunities for direct social interaction have declined (Fairly,
Mangrum, & Wieder, 2001). Normal interpersonal communication involves nonverbal
cues being sent and received whereas, in e-mail, the dialog is devoid of nonverbal cues.
As a result, miscommunication can occur among business staff, partially due to the lack
of nonverbal language cues. When people use e-mail, they operate in a cue-less
environment (Ku, 1996).

Purpose of the Project

The reliance of business staff on CMC, a reliance that for better or worse has
degraded the available nonverbal cues, could have a negative impact on interpersonal
communication in the workplace. According to Fairly et al. (2001), the interpersonal
communication events have simply moved from formal meetings to impromptu
gatherings around a computer. The purpose of this project was to conduct a study to
document the extent to which people rely on electronic messaging systems, the
relationship between the amount of time in writing messages and message clarity, and to
determine the impact irrelevant messages have on the electronic communication medium.

Chapter Summary

Nonverbal messages are the foundation of communication, but these cues are
notably absent from the most popular forms of current communication, e-mail and text
messaging. Some users have created combinations of symbols that represent nonverbal
cues. These symbols, called emoticons, are used in an attempt to lessen the impact of the
missing cues; however, business staff do not have that luxury. Reliance on CMC within business staff will continue to grow, and with that growth will come adaptations to counter the lack of nonverbal cues (Fairly et al., 2001). The purpose of the project was to support or refute the hypothesis that business staff have come to rely on e-mail as a primary means of communication, that there is a link between time spent in writing messages and message clarity, and that irrelevant messages are disruptive to electronic communication.
Chapter 2

REVIEW OF LITERATURE

One purpose of this project was to determine if there is a link between time spent in writing messages and message clarity. It is this author's belief that the lack of nonverbal cues in the electronic medium creates a need to more carefully construct messages to avoid miscommunication. In order to understand not only how the communication process works but also why it fails, one must understand: (a) the inner workings of the brain, (b) the influences on language acquisition, and (c) the variables that inhibit the ability to communicate. Communication is an elaborate process that is not easily attributed to one specific area of the brain or one specific skill set. Also, damage to any one of the areas of the brain involved in the process of communication can inhibit one’s ability to communicate (Bruer, Farah, Posner, & Robart, 2001). In order to build the foundation of the study about a single piece of the communication puzzle, the inner workings of the brain, its normal development, and the impact of injury must be addressed. This author describes the timeline of brain development in relationship to communication. Thereafter, the effect of injuries to communication centers are explored. Following those sections, this author: (a) defined nonverbal language, (b) explained how individuals learn nonverbal language, and (c) examined the inhibitors. Included in the inhibitors section is a detailed look at the impact that the use of technology has on an individual’s ability to receive and decode nonverbal cues.
Brain Development and Language

The brain begins, as with most life, in the embryo (Bruer et al., 2001). By the 21st day of development, an area called the neural tube is formed. The front part of the neural tube develops into the brain, and the rest of the neural tube develops into the spinal cord. Within the growing brain, three areas develop that will be responsible for language processing capabilities, mainly located in the left hemisphere. These areas are: (a) Broca’s area, found in the inferior frontal lobe; (b) Wernicke’s area found at the junction between the superior temporal and the parietal lobe; and (c) the arcuate fasciculus which connects the two areas. These areas are the primary sources of the ability to communicate, although it was reported by Bruer et al. that these areas are not the “well-circumscribed, homogeneous areas” they were once believed to be, but they are composed of “small, non-adjacent focal spots specialized for specific components of language” (p. 297). Although there is a debate about the identity and precise role of language areas, the importance of these areas is unquestioned.

Over time, investigations into the development of the language processing centers of the brain have found that lesions or damage to the brain have effects on individuals’ ability to communicate, with different impacts found in children and adults (Bruer et al., 2001). Damage to the left temporal regions can be associated with impairments in grammar and in expressive language, while perinatal damage to the right hemisphere is associated with deficits in vocabulary in children between 10-17 months of age. This implies an ongoing shift in the role of different brain regions in language acquisition.

Physically, the ability to understand many nonverbal cues begins in an almond shaped neurostructure in the brain called the amygdale, which produces and responds to
nonverbal cues (Givens, 2000). The amygdale excretes hormones into the blood and activates brain stem circuits in response to stressful situations as part of the natural defense system. If the amygdale is removed, cues that are associated with negative situations become incomprehensible. This applies only to negative cues, however, and is part of the human natural fight or flight response.

*Definition of Nonverbal Language*

All communication is processed through the brain (Pinker, 1997). The primary focus of this project is nonverbal language, which is defined. After this definition, the process of how individuals gain knowledge of nonverbal language is explored, along with the inhibitors to the accurate sending and receipt of nonverbal language cues.

Nonverbal language permeates the world, and according to Boles (1997), as much as 93% of communication is processed nonverbally. Nonverbal language consists of body language, which includes reflexive (i.e., involuntary) or nonreflexive (i.e., voluntary) movements that communicate emotional, attitudinal, or informational messages (Wood, 1981). As a definition, this is sufficiently comprehensive to capture the broad meaning of body language without a definition of specific reflexive or nonreflexive movements. This is important because body language differs across cultures.

Body language is expressed through many aspects of the human body, from facial expressions and *proxemics* (e.g., referring to the space between sender and receiver) to the choice of attire (Knapp & Hall, 2002). While nonverbal communication has been defined as communication without words, this form of communication is so closely connected with words that it is nearly impossible to separate verbal, or written,
communication from nonverbal. However, communication is constant, regardless of intent to communicate. People send messages to those around them without a conscious effort. Nonverbal language does not require a word to be spoken or written to be expressed, nor does nonverbal language require years of schooling for appropriate usage.

*Learning Nonverbal Language*

People learn the use of nonverbal language before they can use verbal language (Wood, 1981). Infants are able to communicate and understand basic messages based on prosody, pitch, loudness, pauses, and tempo. Between 6-12 months, some infants can ask questions, express anger, and express excitement through sound patterns. As children gain the use of spoken words, their use of gestures does not disappear; in fact, young children must accompany their words with gestures, or their meanings will be lost. As their ability to use verbal language increases, their dependency on gestures and other nonverbal cues diminishes, but the cues never disappear. It is important to note that, just as the learning environment affects the ability to learn the spoken language, so does the environment affect the understanding of nonverbal language.

There is little research on what preempts human reception of nonverbal language (Wood, 1981). Nonverbal cues can be as obvious as an obscene or rude gesture, or as subtle as a change in tone of voice, although these can differ from one culture to another. There is no course designed to teach children this subculture of language, yet it is undeniably important for everyday communication and success. The exact nature of how nonverbal language is learned has yet to be understood, but it is clear that the dominant factor is experience.
Barriers to Understanding and/or Receipt of Nonverbal Language

For most people, the ability to decode nonverbal cues is a natural and unconscious ability (DePaulo, 1979). However, for others, the ability to understand this hidden language of subtle cues is a daily struggle. Worse, some people remain ignorant of their missing skill. Often, they are unaware of their lack of social competence. Unable to pinpoint the cause, they are unable to seek a solution (Knapp & Hall, 2002). There are many factors that contribute toward cue reception and, thus, there are many potential factors that could be at fault for scrambled or missed nonverbal cues. There are a surprisingly large number of natural inhibitors of nonverbal cues. In this next section, the author examines a few of these natural roadblocks inhibitors which may explain why some people misunderstand messages in the business environment, or conversely, why some people are able to communicate more easily in an environment that lacks nonverbal cues.

*Aphasia*

For over a century, it has been known that injury to specific areas of the brain results in pronounced deficiencies in language use in adults (Bruer et al., 2001). Surprisingly, when similar injuries occur early, or when children undergo complete removal of their left hemispheres in the first few years of life, the impacts are minimal in comparison to adults.

Loss of the ability to speak is termed, aphasia, and it is at the extreme end of the language impairment spectrum (Neuroscience, 2003). Broca’s aphasia, caused by damage to Broca’s area, prevents a person from being able to produce speech.
An individual with Broca's aphasia can understand language, but his or her words are not properly formed, speech is slow and slurred, and in some extreme cases, words cannot be formed at all. In comparison, the presence of Wernicke's aphasia creates a loss in the ability to understand language. The individual has no difficulty in the production of sounds. Unfortunately, he or she is unable to arrange the words in an order that makes sense and produces word salad rather than coherent sentences. Damage to the Arcuate Fasciculus results in a disorder termed, conduction aphasia. An individual with conduction aphasia can understand language, but cannot repeat words nor can he or she speak coherently.

**Autism**

Another type of language impairment is autism (Neuroscience, 2003). Compared to aphasia, in autism, there is a lesser degree of the loss of ability to communicate. This disorder is thought to be caused in the first 20-24 days of gestation; the end result is a shorter brain stem, a smaller facial nucleus, and often a complete lack of the superior olive, an auditory relay station. Additionally, the amygdale, cerebellum, and hippocampus are smaller in autistic individuals (Givens, 2002). Often, autistic children experience a delay in the development of language skills; in some cases, the spoken language ability never develops (Bragdon & Gamon, 2000). For most autistic children, speech does develop, although they may exhibit unusual intonation and rhythm which includes repeated words and phrases. Thus, they rarely experience the kind of conversations in which their nonautistic peers normally engage.

In brain images of autistic individuals, hemisphere abnormalities have been found, mostly in the left hemisphere. In these scans, there is less activity than what
would be seen in a healthy individual. Also, in most people, the left hemisphere receives a greater amount of blood than the right, while autistic people have an equal blood flow in the hemispheres. This has led researchers to believe that the poor language and analytical abilities of autistic individuals is directly linked with an underactive left hemisphere.

*Specific Language Impairment*

On a lesser scale of impairment, specific language impairment (SLI) is a term that, basically, is used to describe children who develop normally, basically, but are in some way impaired in the use of language (Buer et al., 2001). While some researchers restrict the term to children with morphosyntactic difficulties (e.g., difficulty with the set of rules that govern language), others use the term with a broader application, from morphosyntactic to phonological (e.g., difficulty with units of sound), to pragmatic (e.g., difficulty with contextual impact on meaning) and semantic deficits (e.g., difficulty with the meaning of words). The cause of SLI is still under investigation. The extent to which SLI is genetic or specific to language vs. a phenomenon that impacts language as well as other abilities is yet to be determined. The possibility exists that “insults to the sensory systems” (p. 305) may cause SLI in individuals with no genetic predisposition.

*Dyslexia and Attention Deficit Hyperactivity Disorder*

Still further on the spectrum, dyslexia is a deficiency in learning to read and write in otherwise intelligent and motivated children (Bragdon & Gamon, 2000). Reading involves not only the temporal lobe, but also the occipital lobe, which houses the visual centers. Dyslexia is not a mere visual failure, although the complex workings and
connections within the brain make identification of an exact cause nearly impossible. It is proposed that prenatal damage to the left hemisphere or abnormal development of the left hemisphere is the likely originator of dyslexia. Because the left hemisphere is more vulnerable to underdevelopment before birth, there is a greater probability that the left hemisphere will transition some of its normal duties to the right hemisphere, which is a likely cause of dyslexia.

When identified and treated early, dyslexia is a challenge that can be overcome (Bragdon & Gamon, 2000). The same is true for Attention Deficit Hyperactivity Disorder (ADHD), which has a surprising impact on language. Specifically, the presence of ADHD impacts an individual’s working memory due to imperfections in the frontal lobe. Working memory is needed in order to retain information for immediate use, that is, short term memory. When working memory is effected, an individual may lose the ability to make timely decisions during conversations or readings. For instance, he or she may hear the statement, “The waitress fed the sky” (p. 15) and would not process that the logic of the statement is false, nor would he or she easily recall the object of the sentence when asked. On the surface, this does not seem to be a large impact; however, this ability is imperative in a business environment, such as complex meetings, in which individuals are required to organize pertinent information or remember important details.

Asperger’s Syndrome and Nonverbal Language Disorder

Asperger’s syndrome (AS) is described as a developmental disorder which is characterized by the inability to understand how to interact socially (NIDS, 2001). An individual with AS might display a distinct lack of coordination, repetitive routines, or
nonverbal communication problems. Also, individuals with AS may show a lack of facial expressions and, often, are able to display only anger or misery. However, many individuals have outstanding memory and take interest in one or two subjects. These individuals are able to talk at length about particular areas while they exclude all other areas.

According to Roman (1998), it has been suggested that nonverbal language disorder (NVLD) and AS are almost identical. However, the degrees of functionality are important to note, as a higher functioning individual could be diagnosed properly with NVLD, while one who functions less well could be diagnosed with AS. Nonverbal Learning Disorder involves three major areas of deficits: "neuropsychological, academic, and social/emotional" (p. 2). While each area is debilitating in its own right, problems in the social/emotional area has the potential to create emotional turmoil and social ostracization. Children with NVLD have an increased risk for depression and anxiety, as well as psychopathology and suicide.

One of the difficulties with the diagnosis of this syndrome is the range of deficits that NVLD individuals may display (Roman, 1998). Often, they are incorrectly labeled because the symptoms are relatively mild. Individuals with NVLD have a "range of visual-spatial, visual motor, sensory, and motor deficits" (p. 2) that interfere with their daily lives.

Because so much of communication is dependent upon nonverbal cues, people with NVLD are at a distinct disadvantage due to their impairments in visual processing and visual/spatial perception (Roman, 1998). Generally, they will fail to see important social interaction cues and nuances in behaviors that convey subtle meanings.
This can lead to challenges in social judgment and problem solving. Because of their inability to perceive a social situation, those with NVLD could react incorrectly to the situation without understanding what it is they have done wrong. Additionally, having not seen the cues to begin with, they have no history upon which build consistency and, thus, will respond to similar situations in an inconsistent and often contradictory manner. Also, novel situations can create unique challenges for those with NVLD; adaptation to circumstances is important to social competency. Frequently, the many socially limiting aspects of NVLD impacts these individuals’ ability to engage in and maintain meaningful relationships.

While individuals with functioning forms of any of these disorders can be taught to appear as if he or she receives cues, there are pitfalls to the memorization of cues as an actor would memorize lines or movements (Givens, 2002). For example, it is virtually impossible to teach someone the type of smile required in any given situation, the timing of the smile, or the force and length of that smile; thus, the memorization of such things result in situations where it is too obvious that the smile is not only a conscious effort but, also, a learned counter action. This can lead to a situation where the opposite of the intended result of acceptance occurs, that is, social ostracism.

*Gender Specific Challenges*

For the most part, inhibitors are not gender biased (Knapp & Hall, 2002). While, consistently, females score higher in studies in regard to receipt of nonverbal cues, on average, the areas of unseen cues balance out, so that men and women are on a level field. However, Turner’s syndrome is a genetic occurrence that has been found to
interrupt women’s ability to interpret body language. Turner’s syndrome is a defect that causes women to have only one X chromosome. With this condition, women may have trouble with “gaze perception” (p. 4), that is, the ability to tell if some one looks directly or indirectly at an object or person. Generally, individuals with Turner’s syndrome are not affected intellectually, but are socially perceived as *geeky* and have a noted difficulty in understanding body language. It has been suggested that, since the syndrome is similar to AS and Autism in regard to body language, further study might lead to an understanding of the role of the X chromosome in those disorders. Cosh (2002) hypothesized that, genetically, males are more likely to have a disorder that interrupts the ability to read body language.

Giannini, Soger, Marin, and Bates (1985) found that women are likely to suffer a lack of reception when they experience Premenstrual Tension Syndrome (PTS). The researchers’ sample was small, and therefore, the findings are not considered conclusive; however, it was found that, when women experience PTS, they were less adept at the interpretation of nonverbal cues. Also, it is likely that sleep deprivation, stress, anxiety, and other temporary health issues might affect individuals, both men and women, and their ability to understand nonverbal language.

There are multitudes of inhibitors in the gene pool. Many of these inhibitors are not as severe as Autism, but all represent challenges that must be overcome or compensated for in order to be a successful part of any community. There are other factors that can inhibit one’s ability to comprehend the nonverbal cues. These factors are imposed by people.
Self-Imposed Inhibitors

One would think that substance abuse would automatically decrease the ability to receive nonverbal cues (Knapp & Hall, 2002). However, this is not entirely true, and as important as understanding the inhibitors to communication is the importance of understanding the factors that enhance communication. Depending on the substance, substance abuse can encourage a withdrawn lifestyle which would support an atrophy of decoding abilities. In this section, the author looks at the heroin addict's ability to perceive nonverbal cues. Also, there is a discussion on nonverbal communication in alcoholics, followed by a brief synopsis of the impact of substance abuse on nonverbal language.

Heroin addicts live a socially withdrawn lifestyle, which explains study results that show heroin addicts are less able to decode nonverbal cues (Giannini & Jones, 1985). As a whole, heroin addicts isolate themselves from friends and family completely and create a cycle of self-depreciation which leads to heroin use, which feeds the isolation, and the cycle is begun again. The drug can become a “self-reinforcing substitute for social integration” (p. 457). Once they are socially withdrawn, it is difficult for heroin addicts to recover from the addiction because of the difficulty of re-entry to social interaction, a requirement in many programs.

Other types of substance abuse can actually increase nonverbal communication abilities, albeit indirectly (Giannini et al., 1984). Typically, those who abuse alcohol are more adept at the interpretation of nonverbal cues, because they must use social and environmental cues to hide their over drinking. Also the factor of a double life is present in those who abuse cocaine. Giannini and Jones (1985) found enhanced interpretation of
facial cues; thus, those who abused alcohol and cocaine were able to conceal their addictive behavior and maintained a high degree of social interaction. For other, more withdrawn addictions, impaired perception can reinforce tendencies for isolation. Social interaction, and thus environment, are factors in a substance abuser’s ability to perceive cues. However, everyone’s ability to decode cues is affected by environmental influences.

*Environmental Inhibitors*

Children learn their verbal communication skills from their parents, and the same can be said of nonverbal communication (Wood, 1981). A positive example can be found in the fact that a child whose mother smiles a lot will be more likely to smile and more often. When family members are more expressive with nonverbal communication, they are more likely to produce children who are not only more expressive but also more receptive to nonverbal communication. On the other hand, children who live in dysfunctional families are more likely to develop increased reception abilities as survival skills; a child who is able to read his or her parents’ cues skillfully could avoid unpleasant situations.

Like the ability to read nonverbal cues, some individuals have an increased degree of ability to read environmental cues, while others struggle (Wood, 1981). Hypothetically, this ability is heavily dependent upon one’s ability to interpret nonverbal cues, which could be influenced by past environments. Children from cultures where displays of emotion are intentionally suppressed are less likely to be able to read emotional cues, as their environment limited their exposure. That the environment
impacts abilities does not seem to be questioned; however, few researchers have specifically applied this to nonverbal communication. This is another possible research point for future studies.

If intervention is available for young children, the use of social interaction training can increase their ability to interact with peers (Wood, 1981). Since a large part of social interaction involves the ability to understand nonverbal cues, it can be assumed that children, who are isolated from others, would have difficulty understanding nonverbal cues. Also, children who are raised in an environment where the expression of emotions is discouraged can be expected to have difficulty in reading body language even when they are removed from that environment.

*Technological Influence*

Another potential impact on the ability to decode nonverbal cues is the steady growth of technology, specifically, computer mediated communication (CMC), which operates without or nearly without the existence of nonverbal cues (Carter, 2003). The use of text messages and e-mails has resulted in the use of some signs of emotion through symbols; for example, a message written in all caps conveys excitement or shouting, or a colon combined with an end parenthesis symbol can create a happy face symbol. At one time, interpersonal communications in the world of corporations and business staff involved business lunches and water cooler gossip, as well as face to face conversations in which instant visual feedback was available through nonverbal cues. Without fanfare or ceremony, humanity has entered an era of communication in which instant written communication has become the preferred method of communicating.
E-mail is a hybrid form of communication that combines speech and writing; messages have the speed and informality of a telephone conversation, but unlike phone calls, can be filed away for later use (Heller, 1998).

According to McCroskey and Richmond (1998), more than 70% of the population has a fear of public speaking. Given this fact, it should be no surprise that e-mail has fast become a primary means for communication (Carter, 2003). E-mail provides a medium in which the sender can be saved from public presentations. Additionally, messages transmitted via e-mail create a security blanket for senders; people can spend time creating a message, unlike face to face or telephone dialog which requires instant responses, and they can send the exact same message to limitless numbers of receivers (Carter). Of course, that is not to say that all of those receivers will interpret the message correctly, since nonverbal cues make up 93% of interpersonal communication (Miller, 2000). However, the electronic document has little to offer in the way of nonverbal cues. Some quasi-nonverbal cues are available, such as font, font coloring, or background picture; however, not all of these are available or acceptable in all situations.

The use of e-mail supports speedy, mass recipient communication, both to the advantage and disadvantage of the users (Bordia, 1997). The sender can quickly type up an emotion filled e-mail, can quickly click on a mass distribution list, and can quickly find him or herself in serious trouble. As the flow of communication increases, the relationship between sender and receiver cannot be made stronger or better through e-mail alone, as it lacks the nonverbal cues that humans rely upon for socioemotional communication (Tompkins, 2003).
Tompkins (2003) stated that "The human connection needed for discerning and enacting truthfulness and trustworthiness is more fragile and tenuous in cyberspace than in face to face context" (p. 207). One reason for this is that words are voluntary while most expressions and other nonverbal cues are not. This means that what is said has been planned, whereas most nonverbal behavior is spontaneous and beyond the sender's control. The spontaneity of nonverbal communication builds a level of truth into the cues that are received. Conversely, messages are carefully crafted before spoken or written and, thus, there is time to adjust a response. The potential for sending a less than true message is much higher with words than with nonverbal cues (Carter, 2003).

Carter (2002) maintained that relationships, built through a CMC medium, can be successful, although the stipulations include having met the other individual at least once prior to the beginning of dialog via e-mail so that a level of trust is already established. The key to the last is truthfulness and trustworthiness; both are difficult to build without past interaction between the parties involved in the communication (Tompkins, 2003).

Even in an environment such as a business, where supervisor and subordinate have met, Ku (1996) reported that subordinates can easily mistake an opinion for a fact or task and can apply tone and emotion to messages that have neither. Also, Ku found that younger employees were more likely to communicate socioemotional content, content that may be dangerous from both a career oriented and a legal standpoint. The use of CMC encourages a level of spontaneity that can lead users to forgo the proper etiquette for business writing. In fact, e-mail etiquette is a growing concern today; a Google search on e-mail etiquette produced over 84,000 results.
Even early in the use of CMC, Domanque (1977) foresaw the potential for miscommunication. Domanque recommended that supervisor and subordinate have a solid relationship to support the CMC dialog and reduce misunderstandings. The strength of that relationship is directly proportional to the ability of the reader to accurately interpret the messages.

One of the positive aspects of CMC is the lack of distinction of gender or ethnicity and, primarily, the focus is on personality (Tompkins, 2003). When first invented, e-mail messages looked exactly the same, written in a typewriter like font on a plain background. Everyone had the same voice, regardless of his or her placement in society (Carter, 2003). This has changed slightly, as the font type, size, and color can be changed, as well as the background. Not only do symbolic emotions exist in the form of emoticons, animated pictures of emoticons can be added for more emphasis on the emotion. Additionally, through chosen words or phrases, communicators can project a personality that identifies him or her as having stereotypical traits linked to gender, ethnicity, or education. In this way, CMC is not entirely devoid of nonverbal cues (Tompkins). Regardless of the nonverbal cues available to the sender, CMC relies more upon a personality based relationship rather than a visually based relationship.

Also, this personality based communication is one of the strongest supporting arguments in favor of CMC.

The existing cues are of little effect in the world of business communication; especially when the goal is to produce standardized communication, and where font type, size, and color are not flexible, and other cues are limited (Bordia, 1997). The members of many organizations use CMC for a diverse set of activities, from problem solving to
idea sharing. The emergence of networked organizations is not necessarily a negative event; a memorandum that might have taken days to complete can now be completed in minutes. Bordia's review of the studies about the comparison of face to face vs. CMC yielded some interesting findings. In these studies, a number of global organizations were examined in order to determine the major differences between face to face and CMC.

When social/emotional tasks were assessed, Bordia (1997) found that the CMC focus group performed poorly in comparison to the face to face focus group. Also, the CMC group did poorly when the tasks involved interdependence. The key factor was the amount of time given to the focus groups. With enough time, members of the CMC group were able to compensate for the lack of nonverbal cues, and the task was performed equally as well as the face to face group. Although it took longer for the CMC group members to communicate, the quality of decisions was not affected.

Another area that Bordia (1997) examined was the temptation of the CMC user to communicate in an uninhibited manner. Members of the CMC group were more susceptible to swearing, name calling, and other inappropriate behavior despite the business setting. This is commonly known as flaming, and it could be the result of a misunderstanding from a previous message, or a sender may have had a bad day and took it out on the receiver (Extej, 1998). Also, Bordia found that the use of CMC can lead to a lack of awareness of social context, which results in "deindividuation" (p. 108). This deindividuation has been found to lead to flaming behavior. Another reason for flaming is the lack of physical presence; individuals may employ flaming as a means to ensure the message is received (Carter, 2003).
In addition, Bordia (1997) found that the use of CMC encouraged a greater equality of participation. Members of the face to face groups experienced challenges because of status differences and overbearing individuals who dominated conversations. In contrast, the members of the CMC group did not have this difficulty, because the medium provided a certain level of equality for all users. Also, the CMC focus group members were better at brain storming than those in the face to face groups. The possible reason given for this is that the use of textual environment limits apprehension and intimidation within group dynamics.

For the members of the CMC group, 40% of their time was spent typing, which indicated that communication via CMC is not always in the best interest of time (Bordia, 1997). Also, in a separate study, Sinickas (2002) found that companies where multiple channels were used, that varied between different types of CMC and face to face communication, there was higher satisfaction rates among the employees and fewer communication problems overall.

Chapter Summary

Communication is a complex process that involves more than sender sending and receiver receiving. The sender sends, the receiver then becomes a sender, and the process becomes a looping cycle of feedback. Because communication involves more than the spoken word and includes nonverbal cues and experienced based meanings, the process is abstract, rather than definite. Because communication never ceases, the process is infinite. To manage this cumbersome process, one needs an equally complex processing center (Knapp & Hall, 2002). Fortunately, the human brain is a complex machine.
Although the modern computer is a marvel, engineers have yet to create a technology that equals the thinking power of the human brain; however, this is not for the lack of effort (Pinker, 1997). Similar to a complex machine, damage to the working parts of the brain can result in notable challenges to communicators.

Nonverbal language is important and recognized from the start of human life (Knapp & Hall, 2002). For people with nonverbal language barriers, regardless of how they came to have those barriers, life can seem a great puzzle with pieces missing.

The use of technology has brought society to a point at which a primary means of communication is lacking in nonverbal cues (Carter, 2003). While some cues do exist in the form of font type and background, and others can be provided through symbol combinations, primarily, the nonverbal cues available to users of CMC are minimal. There are no substitutes for nonverbal, face to face interaction. The receivers of CMC are left to imagine cues that may or may not actually exist and, often, must follow up with the sender for clarification. One message could eventually become two dozen back and forth relays until the receiver is confident that the message is clear.

While there are some nonverbal cues available to the users of CMC, the use of CMC for tasks with social/emotional content or tasks that require interdependence can have negative impacts due to the lack of nonverbal cues (Bordia, 1997). However, Bordia found that, if increased time is provided to solve the problem or accomplish the task, the effectiveness of using CMC is increased. Another problem associated with CMC and the lack of nonverbal cues is the level of trust given to messages. Without face to face interaction, the level of trust granted at the start of a dialog is minimal, as opposed
to situations in which the individuals had the opportunity to meet at least once (Tompkins, 2003).

The purpose of this project is not to condemn the use of CMC, rather it is to encourage the use of multi-channel communication. Business staff can increase the effectiveness of communication by the use of multiple means of communication (Sinickas, 2002). In Chapter 3, the author details the method which was used for this project.
Chapter 3

METHOD

The purpose of this project was to conduct a study to document the extent to which people rely on electronic messaging systems, to determine if a relationship exists between to the amount of time that people spend on messages and the clarity of messages, and to determine if irrelevant messages have become harmful to electronic communication. In business, communication is of vital importance. The majority of corporate knowledge is shared or even created in face-to-face communication, yet the majority of communication within a business is conducted by use of Computer Mediated Communications (CMC; Stamps, 1998). Because the act of communication has evolved notably, even within the last decade, the use of paperless communication media has steadily taken the place of the letter and the memorandum. The implications of this trend are far reaching, especially in the business world. The reliance of business staff on CMC, a reliance that for better or worse has degraded the available nonverbal cues, could have a negative impact on interpersonal communication in the work place.

Survey Instrument

To accomplish the goals of this project, this author designed a web-based survey comprised of 20 questions (see Appendix). This author used questionpro.com as the vehicle for the survey. The survey was divided into six sections: (a) demographics, (b)
amount of use, (c) purpose of use, (d) quality of communication, (e) quantity of communication, and (f) use of symbols.

In the demographics section, three questions were asked: (a) age, (b) gender, and (c) number of years in a corporate environment. The intent of these questions was to gather demographic data about the people who complete the survey, such as: (a) does age impact the use of CMC, (b) does gender impact the use of CMC, and (c) does the number of years in a corporate environment impact the use of CMC?

In the section about amount of use, four questions were asked: (a) how much time is spent composing or receiving e-mails, (b) is there a preference for face to face communication, (c) is there a preference for electronic communication, and (d) is e-mail the primary means of communication? The responses to this section determined how much time is spent communicating via CMC, and the medium preference of the survey respondents. In these questions, a Likert scale was used.

In the following section, the purpose of CMC use was examined with two related questions with Likert scale answers and two sub-questions: (a) what extent is e-mail used for business purposes and (b) what extent is e-mail used for personal purposes? In the sub-questions, respondents provided a percentage for the type of use. These questions were fill in the blank. The intent of this section was to determine the extent to which business staff use CMC for nonbusiness communication.

The section on the quality of communication sought to understand how respondents feel about the e-mails received. There were two questions with related sub-questions: (a) are the messages received easy to understand and (b) are the messages sent easy to understand? The sub-question to both of these asked for a percentage of e-mail
that is associated with follow up to received or sent messages. The primary questions used a Likert scale, while the sub-questions were fill in the blank. The intent of this section was to determine how much of the message traffic is related to clarification.

For the next section about quantity, participants were asked to indicate the number of e-mails received on a daily basis. This question had an available range from which the participants could choose. This question had three fill in the blank sub-questions: (a) how many messages are received daily, (b) what percent of daily messages are pertinent, and (c) what percent of daily messages are not pertinent? The intent of this section was to determine how much of the message traffic is superfluous.

For the final section, participants were asked about their use of symbols to indicate emotion or tone. Do the participants use symbols to indicate emotion or tone in (a) business or (b) personal e-mail messages. These two questions used a Likert scale. The intent of this section was to determine if respondents use symbols as substitutes for nonverbal cues.

At the end of the survey the participants could provide comments pertaining to the survey or survey material. Also, they could request a copy of the results. Participants were also reminded that their information was anonymous and that any information they choose to provide in the comments section would not be released to others.

Permission to Conduct Study

In accordance with Regis University policy, permission to conduct the project was obtained from the members of the Human Subjects Review Committee for research
involving human subjects (see Appendix B for a copy). The survey was entirely voluntary; a participant consent statement was at the start of the survey.

Procedures

In order to gather as many responses as possible, this author networked via personal interaction and e-mail within the community and professional organizations. The survey was be open for responses for a period of 3 months to allow for maximum exposure.

Data Analysis

The vehicle used for the survey, questionpro.com, provided the survey data as raw numbers in a data spreadsheet format. Data could be requested at any point during the survey process. At the end of the survey period, this author pulled the data spreadsheet into a pivot table, which allowed multiple comparisons at a time. The questions were examined singularly, but were also be cross checked with other questions on the survey to determine impact of one response on another. Statistical analysis was used to produce percentage based trends for each demographic provided for the first three questions. The response goal was 300 respondents.

Chapter Summary

The purpose of this project was to examine the use of CMC in the business environment and the impact of the lack of nonverbal cues available for the medium. The three hypotheses this author wished to address were: (a) that electronic messages have become a primary means of communication, (b) that time spent in the writing of
messages is linked to message clarity, and (c) that irrelevant messages have become a
distraction in the communication process. The vehicle of this project was a web-based
survey comprised of 6 sections and 20 questions. Survey respondents participated on a
volunteer basis; although little of the collected data is personal, and the responses were
anonymous. Survey participants had the opportunity to view the results as requested.
The results of the survey are presented in chapter 4 followed by a discussion of the results
in chapter 5.
Chapter 4

RESULTS

The purpose of this project was to conduct a study to document the extent to which people rely on electronic messaging systems in relationship to the amount of time that they spend in order to clarify messages due to miscommunication. This chapter will outline the numerical results of the survey the author conducted. A discussion of what the results mean can be found in the following chapter.

Sample Selection

This survey was distributed primarily through e-mail, thereby, it was assured that the respondents engaged in at least some e-mail use. Although the respondents were not asked for place of employment, this author contacted a few specific locations in order to distribute the survey through a company. A real estate company and a law firm in New York City agreed to respond and provided approximately one-half of the survey responses. The remainder of the responses appeared to have come from corporate military and government civilian workers as well as educators.

Response Rate

A total of 178 responses were returned to this researcher. This response rate represented 59% of the original goal of 300 responses. However, some of the respondents chose to leave some questions blank; therefore, there were between 157-164 responses for each of the questions. The survey consisted of 20 questions, divided into
six sections: (a) demographics, (b) amount of use, (c) purpose of use, (d) quality of communication, (e) quantity of communication, and (f) use of symbols. In this chapter, the researcher will present the results for each question in each section, starting with demographics.

Demographics

The first question in the demographics section requested the respondents’ ages. The total number of responses for this question was 164. The respondents’ ages were rather evenly distributed among the options: (a) 29% of the respondents were between 20-30; (b) 36% of the respondents were between 30-40; 40% were between 40-50; and (d) 41% were over 50.

The second question in the demographics section requested the respondents’ gender. The total number of responses for this question was 164. Of the respondents, 53% indicated their gender as female, while the remaining 47% were male. The results for these two questions, age and gender, are presented in Table 1 and Table 2 respectively.
Table 1

*Age of Respondents*

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>19</td>
<td>11.59</td>
</tr>
<tr>
<td>26-30</td>
<td>28</td>
<td>17.07</td>
</tr>
<tr>
<td>31-40</td>
<td>36</td>
<td>21.95</td>
</tr>
<tr>
<td>41-50</td>
<td>40</td>
<td>24.39</td>
</tr>
<tr>
<td>51+</td>
<td>41</td>
<td>25.00</td>
</tr>
</tbody>
</table>

Table 2

*Gender of Respondents*

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>77</td>
<td>46.95</td>
</tr>
<tr>
<td>Female</td>
<td>87</td>
<td>53.05</td>
</tr>
</tbody>
</table>

The third and final demographic question pertained to the number of years the respondents had worked in the business or corporate world. The total number of responses for this question was 163. Of the respondents, 36% indicated that they had worked in a corporate environment for less than 10 years, 28% had worked in a corporate
environment for between 10-20 years, while the remaining 36% had been in a corporate environment for over 20 years. The results for this question are presented in Table 3.

Reported Use of E-mail

The purpose of this next section was to determine how much respondents used e-mail. The first question in the section asked respondents to identify the amount of time spent in e-mail review or in composition. The total number of responses for this question was 164. One respondent choose the option "I do not use e-mail" and consequently was skipped to the end of the survey. Only 20% spent less than 30 minutes a day on e-mail tasks. Nearly 40% spent between 30-90 minutes on e-mail tasks, while the remaining 40% reported they spent 2 or more hours on e-mail tasks. The responses to this question are presented in Table 4.
Table 3

Number of Years Respondents Have Worked in a Business Environment.

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5</td>
<td>36</td>
<td>22.09</td>
</tr>
<tr>
<td>5-9</td>
<td>23</td>
<td>14.11</td>
</tr>
<tr>
<td>10-15</td>
<td>23</td>
<td>14.11</td>
</tr>
<tr>
<td>15-20</td>
<td>23</td>
<td>14.11</td>
</tr>
<tr>
<td>Over 20</td>
<td>58</td>
<td>35.58</td>
</tr>
</tbody>
</table>

Table 4

Amount of Time the Responder Spends on E-mail

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-30 minutes a day</td>
<td>33</td>
<td>20.12</td>
</tr>
<tr>
<td>30-60 minutes a day</td>
<td>39</td>
<td>23.78</td>
</tr>
<tr>
<td>60-90 minutes a day</td>
<td>26</td>
<td>15.85</td>
</tr>
<tr>
<td>Two or more hours</td>
<td>65</td>
<td>39.63</td>
</tr>
<tr>
<td>I do not use e-mail</td>
<td>1</td>
<td>00.61</td>
</tr>
</tbody>
</table>

The second question in this section asked respondents to agree or disagree with the statement, "I prefer face to face communication and use e-mail as little as I can."
The total number of responses for this question was 162. While 16% chose the Undecided option, the majority, 43%, either Disagreed or Strongly disagreed with the statement. The remaining 40% indicated that they either Agreed or Strongly agreed with the statement.

The purpose of the third question was to provide a balance to the previous one, and the statement was reversed to read “I prefer to use e-mail communication and use face to face communication as little as I can.” For this question, 15% were Undecided, while 50% Disagreed or Strongly disagreed. The remaining 35% either Agreed or Strongly agreed. The total number of responses for this question was 162. These two mirror questions are presented in Tables 5 and 6.

Table 5

*Respondent Prefers Face To Face Communication and Uses E-mail Rarely*

<table>
<thead>
<tr>
<th>Response</th>
<th>$n$</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>16</td>
<td>9.88</td>
</tr>
<tr>
<td>Agree</td>
<td>50</td>
<td>30.86</td>
</tr>
<tr>
<td>Undecided</td>
<td>26</td>
<td>16.05</td>
</tr>
<tr>
<td>Disagree</td>
<td>59</td>
<td>36.42</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>11</td>
<td>6.79</td>
</tr>
</tbody>
</table>
Table 6

Respondent Prefers to Use E-mail Communication

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>7</td>
<td>4.32</td>
</tr>
<tr>
<td>Agree</td>
<td>50</td>
<td>30.86</td>
</tr>
<tr>
<td>Undecided</td>
<td>25</td>
<td>15.43</td>
</tr>
<tr>
<td>Disagree</td>
<td>68</td>
<td>41.98</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>12</td>
<td>7.41</td>
</tr>
</tbody>
</table>

The final question in the amount of use section asked respondents to identify their primary means of communication. The total number of responses for this question was 160. The majority chose e-mail as their primary communication means, while 25% preferred to use face to face dialog as their primary means of communication. The remaining 17% used the telephone as their primary means of communication. The data for this question are presented in Table 7.
Table 7

*Respondents’ Primary Means of Communication*

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The telephone</td>
<td>27</td>
<td>16.88</td>
</tr>
<tr>
<td>E-mail</td>
<td>92</td>
<td>57.50</td>
</tr>
<tr>
<td>Face to face dialog</td>
<td>41</td>
<td>25.62</td>
</tr>
</tbody>
</table>

Reported Purpose of Use

The next section was focused on the purpose of e-mail use. This section was comprised of four questions; in two of the questions, the respondents entered a percentage, and in the other two, they were asked to respond to a Likert scale. The first question asked respondents to what extent they used e-mail for business purposes. The total number of responses for this question was 160. The majority reported frequent use of e-mail for business purposes. Slightly over 25% always used e-mail for business purposes. Fewer than 12% reported the use of e-mail for business purposes as Sometimes, while the remaining 7.5% Rarely to Never used e-mail for business purposes. This question was accompanied by a fill-in-the-blank question which asked respondents to identify what percent of their e-mail was related to business purposes. For the majority of the respondents, more than 75% of their e-mail was business related. The responses to two questions are represented in Tables 8 and 9 below.
Table 8  

*Extent To Which Respondents Use E-mail for Business Purposes*

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>42</td>
<td>26.25</td>
</tr>
<tr>
<td>Frequently</td>
<td>87</td>
<td>54.37</td>
</tr>
<tr>
<td>Sometimes</td>
<td>19</td>
<td>11.88</td>
</tr>
<tr>
<td>Rarely</td>
<td>4</td>
<td>2.50</td>
</tr>
<tr>
<td>Never</td>
<td>8</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Table 9  

*Percent of Respondents’ E-mail That is Business Related*

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% or less</td>
<td>17</td>
<td>10.00</td>
</tr>
<tr>
<td>11-15%</td>
<td>9</td>
<td>5.00</td>
</tr>
<tr>
<td>26-50%</td>
<td>1</td>
<td>0.60</td>
</tr>
<tr>
<td>51-75%</td>
<td>30</td>
<td>18.00</td>
</tr>
<tr>
<td>76-100%</td>
<td>102</td>
<td>63.75</td>
</tr>
</tbody>
</table>

The second question in this section asked respondents whether they used e-mail for personal purposes. The total number of responses for this question was 161.
The responses were: (a) 33% reported e-mail for personal purposes Frequently or Always, (b) 36% Sometimes used e-mail for personal purposes, and (c) 31% Rarely to Never use e-mail for personal purposes. This question was accompanied by a fill-in-the-blank question which asked respondents to identify what percent of their e-mail was related to personal purposes. The majority of the respondents indicated that 10% or less of their e-mail traffic was personal in nature. These two questions are represented in Tables 10 and 11.

Table 10

*Extent To Which Respondents Use E-mail for Personal Purposes*

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>15</td>
<td>9.32</td>
</tr>
<tr>
<td>Frequently</td>
<td>38</td>
<td>23.60</td>
</tr>
<tr>
<td>Sometimes</td>
<td>58</td>
<td>36.02</td>
</tr>
<tr>
<td>Rarely</td>
<td>46</td>
<td>28.57</td>
</tr>
<tr>
<td>Never</td>
<td>4</td>
<td>2.48</td>
</tr>
</tbody>
</table>
Table 11

Percent of Respondents' E-mail That is Personal Related

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% or less</td>
<td>83</td>
<td>51.55</td>
</tr>
<tr>
<td>11-25%</td>
<td>58</td>
<td>36.02</td>
</tr>
<tr>
<td>26-50%</td>
<td>22</td>
<td>13.66</td>
</tr>
<tr>
<td>51-75%</td>
<td>6</td>
<td>3.72</td>
</tr>
<tr>
<td>76-100%</td>
<td>15</td>
<td>9.32</td>
</tr>
</tbody>
</table>

Reported Quality

The purpose of this section was to determine the quality of both incoming and outgoing messages. This section was comprised of four questions: two were based on a Likert scale, and two were fill-in-the-blank.

The first question in this section asked the survey participants to respond to the statement, "Messages I receive are easy to understand." The total number of responses for this question was 160. The majority indicated that their received messages were frequently easy to understand. An additional 22.5% always found their received messages easy to understand. Less than 2% rarely received clear messages, while the remaining 12% sometimes received clear messages. This question was accompanied by a fill-in-the-blank question which asked respondents to identify what percent of their received messages required follow up for clarification. The majority of the respondents
indicated that 10% or fewer of their received messages required follow-up. The findings for these questions are presented in Tables 12 and 13.

Table 12

Respondents' Received Messages Are Easy to Understand

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>36</td>
<td>22.50</td>
</tr>
<tr>
<td>Frequently</td>
<td>102</td>
<td>63.75</td>
</tr>
<tr>
<td>Sometimes</td>
<td>19</td>
<td>11.88</td>
</tr>
<tr>
<td>Rarely</td>
<td>3</td>
<td>1.88</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Table 13

Percentage of Respondents' E-mails Which Require Follow-up

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% or less</td>
<td>89</td>
<td>55.63</td>
</tr>
<tr>
<td>11-25%</td>
<td>36</td>
<td>22.50</td>
</tr>
<tr>
<td>26-50%</td>
<td>19</td>
<td>11.88</td>
</tr>
<tr>
<td>51-75%</td>
<td>12</td>
<td>7.50</td>
</tr>
<tr>
<td>76-100</td>
<td>7</td>
<td>4.38</td>
</tr>
</tbody>
</table>
In the last set of questions of this section, the survey participants were asked to respond the statement, "Messages I send are easy to understand." The total number of responses for this question was 160. The vast majority of the respondents reported their sent messages as Frequently or Always easy to understand. Less than 7% reported their sent messages as Sometimes or Rarely easy to understand. This question was accompanied by a fill-in-the-blank question which asked respondents to identify what percent of their sent messages required follow up for clarification. The data for these two questions are presented in Tables 14 and 15.

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>66</td>
<td>41.25</td>
</tr>
<tr>
<td>Frequently</td>
<td>84</td>
<td>52.50</td>
</tr>
<tr>
<td>Sometimes</td>
<td>9</td>
<td>5.62</td>
</tr>
<tr>
<td>Rarely</td>
<td>1</td>
<td>0.62</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Table 15

*Percentage of Respondents’ E-mails Which Require Follow-up*

<table>
<thead>
<tr>
<th>Answer</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% or less</td>
<td>119</td>
<td>74.84</td>
</tr>
<tr>
<td>11-25%</td>
<td>16</td>
<td>10.06</td>
</tr>
<tr>
<td>26-50%</td>
<td>14</td>
<td>8.81</td>
</tr>
<tr>
<td>51-75%</td>
<td>13</td>
<td>5.03</td>
</tr>
<tr>
<td>76-100%</td>
<td>4</td>
<td>2.53</td>
</tr>
</tbody>
</table>

Reported Quantity

This section was comprised of two questions. The first question asked respondents to indicate how many e-mails they received daily. The total number of responses for this question was 157. Nearly 40% reported that they received fewer than 25 e-mails per day, while 36% reported they receive 50 or fewer e-mails per day. The remaining 25% reported they receive more than 50 e-mails per day.

Closely related to amount of messages, the next question asked the respondents to indicate what percent of their in-bound messages was relevant to them or their work. Just over half of the respondents indicate that 25% or more of their inbound messages were not relevant to them or their work. The findings for these two questions can be found in Tables 16 and 17.
Table 16

*Quantity of Respondents’ E-mails*

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 25</td>
<td>62</td>
<td>39.49</td>
</tr>
<tr>
<td>25-50</td>
<td>56</td>
<td>35.67</td>
</tr>
<tr>
<td>50-70</td>
<td>26</td>
<td>16.56</td>
</tr>
<tr>
<td>75-100</td>
<td>7</td>
<td>4.46</td>
</tr>
<tr>
<td>Over 100</td>
<td>6</td>
<td>3.82</td>
</tr>
</tbody>
</table>

Table 17

*Percent of Relevant Inbound Messages*

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% or less</td>
<td>8</td>
<td>5.13</td>
</tr>
<tr>
<td>11-25%</td>
<td>15</td>
<td>9.62</td>
</tr>
<tr>
<td>26-50%</td>
<td>34</td>
<td>21.79</td>
</tr>
<tr>
<td>51-75%</td>
<td>29</td>
<td>18.59</td>
</tr>
<tr>
<td>76-100%</td>
<td>68</td>
<td>43.59</td>
</tr>
</tbody>
</table>
Use of Symbols

This last section was comprised of two questions in regard to the use of symbols in e-mail to indicate emotion. The first question asked respondents to indicate how frequently they used symbols when they wrote business e-mails, the second question asked the same of personal e-mails. The total number of responses for the first question was 157. The vast majority Never used symbols to indicate emotion in business e-mails. While 9% reported that they Sometimes, Frequently, or Always used emotion symbols in business e-mails. The total number of responses for the second question was 158. Slightly over half, 53%, Rarely or Never used emotion symbols in personal e-mails. Just over 30% Frequently or Always used emotion symbols in personal e-mails. The remaining 17% Sometimes used emotion symbols in personal e-mails. The findings for these two questions are presented in Tables 18 and 19.

Table 18

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>2</td>
<td>1.27</td>
</tr>
<tr>
<td>Frequently</td>
<td>3</td>
<td>1.91</td>
</tr>
<tr>
<td>Sometimes</td>
<td>9</td>
<td>5.73</td>
</tr>
<tr>
<td>Rarely</td>
<td>42</td>
<td>26.75</td>
</tr>
<tr>
<td>Never</td>
<td>101</td>
<td>64.33</td>
</tr>
</tbody>
</table>
Table 19

*Respondents Use Emotion Symbols While Writing Personal E-mails*

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>16</td>
<td>10.13</td>
</tr>
<tr>
<td>Frequently</td>
<td>32</td>
<td>20.2</td>
</tr>
<tr>
<td>Sometimes</td>
<td>27</td>
<td>17.09</td>
</tr>
<tr>
<td>Rarely</td>
<td>33</td>
<td>20.89</td>
</tr>
<tr>
<td>Never</td>
<td>50</td>
<td>31.65</td>
</tr>
</tbody>
</table>

Chapter Summary

This survey contained six sections that consisted of 20 questions. The results were presented through narrative as well as in tables. Discussion and interpretation of the results, together with implications for further research, are presented in Chapter 5.
Chapter 5

DISCUSSION

This project was loosely based on the Ku (1996) study, which at 10 years old, was a good resource and comparison. While this researcher did not seek to address all of the topics covered in the Ku study, there were areas of similarity: (a) amount of use and purpose of use, and (b) quality of communication through e-mail. In addition to these areas studied by Ku, this researcher addressed the quantity of e-mail communication and the use or non use of symbols to indicate emotion.

Prior to distribution of the survey, this author had three hypotheses. The first was that e-mail had become a primary means of communication. Ku (1996) determined that electronic communication was not viewed as the best way to manage complex tasks, that it was best used as a tool to disperse routine information. This author believed that this had changed to the point that e-mail has become the primary communication means. Ku found that users considered e-mail an “efficient communication channel” (p. 21) which implied a lack of concern over message quality at the user level. This author’s second hypothesis was that there would be a correlation between the time spent on writing clear messages and on follow-up. The third hypothesis was that in-boxes were filled daily with irrelevant messages. At the time of Ku’s study, e-mail was not sufficiently advanced to be addressed by Ku. This author hoped to further Ku’s research and bring it into the true computer age.
E-mail As a Primary Means of Communication

The results from this survey clearly supported the first hypothesis that e-mail has become the primary means of communication in business; statistically, its use was not notably impacted by age, gender, or number of years in business. The author was surprised to find that the older respondents overwhelmingly choose to use e-mail as a primary means of communication, while the younger group of respondents, 20-30 years of age, reported that they use face to face communication nearly as much as e-mail. The majority of the respondents indicated that e-mail was the preferred communication medium, which supported the author’s first hypothesis.

Link Between Time and Clarity

The existence of a correlation between time spent in the writing of messages and message clarity or follow up was the second hypothesis. The majority of respondents reported that they received 25-50 messages a day and spent over an hour daily on e-mail related work. When cross-referenced with the questions about clarity and follow-up, these respondents reported that they Always or Frequently sent messages, and the need for follow-up for clarity was less than 10%.

Despite the strong indicators in favor of this author’s second hypothesis, some doubts remain. This author observed that the majority of the respondents supported this hypothesis; however, when the remaining responses were observed, the reported time spent in writing messages and clarity of messages was the same as the majority group, as was the reported follow-up percentage. If the hypothesis is: “People who spend more time on e-mail have clearer messages,” then the negative would be “People who spend
less time on e-mail have unclear messages." These results suggested a lack of a negative to the majority response.

Possible reasons for this lack of a negative finding are: (a) the survey was a flawed method, (b) the survey questions were flawed, and (c) no negative exists. It is possible that a survey, which was based on individuals' perceptions of the clarity of their own messages, could not provide the objective point of view needed for an academic study. Also, a survey is a self-report instrument, and one cannot know the accuracy of the responses. However, the respondents may not have understood the meaning of the questions about clarity and follow-up. In addition, the respondents could not seek clarification on the questions. Additionally, the response range provided to the respondents may have been too large. Respondents who reported only 30 messages were grouped with those who reported 50; the former might have spent less than an hour a day on e-mail messages. This would account for the lack of a negative finding. However, there may not be a negative simply because one does not exist. It is possible that some people are naturally better writers and can compose messages in less time without sacrificing clarity.

Overall, the results from the survey supported the hypothesis that time is linked with clarity. It is this author's opinion that all three of the explanations may have affected the survey results. The lack of a negative does not disprove the hypothesis; however, this is one area that should be considered for continued research.
Irrelevant Messages

The largest relevancy group selected was the 76-100% grouping. However, that group was selected by only 43.59% of the sample, whereas the other selections consisted of to 56%. The majority of the responses for this section indicated that less than 75% of their messages were relevant to their work. The disparity in the responses for this question led this author to believe that there is a problem with irrelevant messages, but that the problem has not become overwhelming to date. This topic is a peripheral one for many people and has not been widely researched; however, it would be a good area for future research.

Limitations to the Project

The primary limitation to this project was the survey tool. A survey is a self-report provided by participants. There is no way to determine the accuracy of the responses. Response rates could have been skewed due to participants’ misunderstanding the questions or due to participants having to choose from pre-grouped responses rather than provide their own inputs.

Another limitation to this project was the types of businesses sampled. This author primarily focused on large and medium sized businesses. The survey was distributed by electronic means into those businesses; thereby, smaller business staff members were excluded. This may have limited the variety of responses. This author made an assumption that large and medium sized businesses would have more cultural diversity; however, this may not have been an accurate assumption.
Recommendations for Future Research

While the results of this survey supported the hypothesis that a link exists between the amount of time spent in the writing of messages and message clarity, further research could examine the exact correlation between this link and the lack of nonverbal cues. This survey was not designed to pinpoint the impact of communicating through a means of communication which lacks nonverbal cues. This author believes individual interviews coupled with verbal and written examples and questions would better provide the means to determine the impact of nonverbal cues or the lack of nonverbal cues has on modern business communication.

Also, further research would serve to identify in more detail the relationship between time spent on messages and message clarity. This author believes a variety of variables impacted the accuracy of the survey results in this area, which may have created a gap in the responses. Future research could take determine if a gap does exist, or could validate the findings of this study.

This author examined one barrier to receiving nonverbal language: technology. Future research could combine multiple barriers to determine the current state of communication in business. A future study could address the impact of business staff interacting in a global market through electronic communication mediums, thus examining environmental and cultural communication barriers as well as technological barriers.
Project Summary

The purpose of this project was to look at the lack of nonverbal cues in electronic communication mediums as one of the barriers to communication and determine the prevalence of e-mail use, identify the relationship between time spent in writing messages and message clarity, and the impact of irrelevant messages. This author began this project with three hypotheses which were all at least partially proved. Based on the findings, e-mail has indeed become the primary means of communication, regardless of age, gender, or number of years in business. There appears to be a link between the amount of time spent on e-mail messages and the clarity of those messages, although further research would help to solidify those results. Also, irrelevant messages find their way into in-boxes; however, the problem has not yet become notable.
REFERENCES


APPENDIX A

Electronic Communications Use Survey
Survey

The survey was administered through questionpro.com. The following are the questions that were asked. Screen shots of the actual survey are provided.

Hello

You are invited to participate in this survey on electronic communication use. In this survey, approximately 500 people will be asked to complete a survey that asks questions about e-mail and the way it is used. There are 20 questions on this survey.

Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. By submitting your survey you are providing consent for your information to be added to the research data.

Your survey responses will be strictly confidential and data from this research will be reported only in the aggregates. Your information will be coded and will remain confidential. If you have questions at any time about the survey or the procedures, you may use the comment block at the end of the survey.

Thank you very much for your time and support. Please start with the survey now by clicking on the Continue button below.

Continue
Section 1 of 6 (questions 1-3)

1. Please indicate your age using the following:
   20-25/ 26-30/ 31-40/ 41-50/ 51+

2. Please indicate your gender
   Male/ Female

3. Number of years in a corporate environment (range)
   Less than 5/ 5-9/ 10-15/ 15-20/ Over 20
Section 2 of 6 (questions 4-7)
4. How much time of your day is spent composing or receiving e-mails
   10-30 minutes a day
   30-60 minutes a day
   60-90 minutes a day
   Two or more hours a day
   I do not use e-mail

(Question number four has a branch option on the web based survey. If a respondent indicates that he or she does not use e-mail, the survey will skip to the end.)
5. I prefer face to face communication and use e-mail as little as I can.
   Strongly Agree/ Agree/ Undecided/ Disagree/ Strongly Disagree

6. I prefer to use e-mail communication and use face to face communication as little as I can.
   Strongly Agree/ Agree/ Undecided/ Disagree/ Strongly Disagree

7. I use my e-mail as a primary means of communication
   Strongly Agree/ Agree/ Undecided/ Disagree/ Strongly Disagree
Section 3 of 6 (questions 8-11)
8. To what extent do you use e-mail for business purposes, such as meeting times, taskings, or other official business?
Always/ Frequently/ Sometimes/ Rarely/ Never

9. ___% of my e-mail is related to business purposes.

10. To what extent do you use e-mail for personal purposes, such as gossip, correspondence, or jokes?
Always/ Frequently/ Sometimes/ Rarely/ Never

11. ___% of my e-mail is related to personal purposes.
Section 4 of 6 (questions 12-15)

12. Messages I receive are easy to understand.
   Strongly Agree/  Agree/  Undecided/  Disagree/  Strongly Disagree

13.  ____% of my received messages require follow up for clarification.

14. Messages I send are easy to understand.
    Always/  Frequently/  Sometimes/  Rarely/  Never

15.  ____% of my sent messages require follow up for clarification
On a daily basis, I receive ___ e-mails.
- Select - ✓

% of my inbound messages are pertinent (important) to me.

% of my inbound messages are NOT pertinent (important) to me.

I use symbols to indicate my emotion or tone when writing business e-mails.
- Select - ✓

I use symbols to indicate my emotion or tone when writing personal e-mails.
- Select - ✓

---

Section 5 of 6 (questions 16-18)
16. On a daily basis, I receive __<choose a number range>__ many e-mails.
Less than 25/ 25-50/ 50-75/ 75-100/ Over 100

17. ___% of my inbound messages are pertinent (important) to me.

18. ___% of my inbound messages are not pertinent (important) to me.

Section 6 of 6 (questions 19-20)
19. I use symbols to indicate my emotion or tone when writing business e-mails.
Always/ Frequently/ Sometimes/ Rarely/ Never

20. I use symbols to indicate my emotion or tone when writing personal e-mails.
Always/ Frequently/ Sometimes/ Rarely/ Never
Additional comments:
Thank you! Please use the space below to provide comments on this survey. If you would like a response, please provide an e-mail address.
APPENDIX B

Internal Review Board Approval Letter
IRB – REGIS UNIVERSITY

September 15, 2005

Theresa Fleisher
4228 Park Blvd
Montgomery, AL 36106

RE: IRB #: 080-05

Dear Theresa:

Your application to the Regis IRB for your project “Nonverbal Communication Cues in the Electronic Medium,” was approved on September 15, 2005.

If changes are made in the research plan that significantly alter the involvement of human subjects from that which was approved in the named application, the new research plan must be resubmitted to the Regis IRB for approval. In addition, it is the responsibility of the principal investigator to promptly report to the IRB any inquiries to human subjects and/or any unanticipated problems within the scope of the approved research which may pose risks to human subjects. Lastly, it is the responsibility of the investigator to maintain signed consent documents for a period of three years after the conclusion of the research.

Sincerely,

Edwin May
Director

cc Robert Collins, Ph.D.
    Adrianna Karch, Ph.D.