Y U No Ansr? A Chronemics Analysis of Electronic Communications

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December 18, 2015

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Abstract

This paper explores current literature related to chronemics in electronic communication to show that emailing, texting, and social media should be studied in order to understand how one's self-esteem is affected by these forms of communication to bring about a greater awareness. This research describes a sample study of college students' reactions to response times using a mixed methods approach, specifically an explanatory sequential model. Through an evaluation of Zimbardo's (1999) time perspective studies, peer reviewed journal articles, and computer-mediated communication chronemic studies, this paper provides an argument that response times in electronic communications indicate priority and hierarchy between communicators which can, in turn, temporarily affect an individual's self-esteem.

Keywords: chronemics, computer-mediated communication, electronic communication, self-esteem, texting, email, social media, response times

"We must never assume that we are fully aware of what we communicate to someone else."

- Dr. Edward T. Hall (1959), from his book *The Silent Language*

Electronic Communication Chronemics

Often times during conversation there are responses and moments of silence. These are natural throughout all forms of communication. In face-to-face communication, moments of silence may be filled with verbal pauses such as "um" or "uh." These moments of silence, even without verbal pauses, can be quite awkward. Psychiatrist Gerald H. Zuk (1965) explained that silence can be used to combat intrusiveness. Silence or no response is a specific nonverbal cue that can encompass multiple meanings. For instance, a teacher asks a question in class and none of the pupils raise their hands. The students' reasons for this could range from not knowing the answer to anxiety about public speaking.

Additionally, responses are also vital to research itself especially those based upon surveys. Creswell (2014) discusses response bias which is the effect of nonresponses on the overall results of a study founded upon surveys. However, there can also be much deeper meanings to silence or no response as seen in the Gospels. When questioned by the high priest, Jesus gave no answer to their charges (Matthew 26:59-63, New Revised Standard Version Catholic Edition). Even when questioned by Pilate, again Jesus gave no answer to the claims or accusations from those who arrested and turned Him in (Matthew 27:12-14). Instances of silence and no response are themes throughout the Old and New Testaments much of which pertains to face-to-face communication or normal conversation. These silences or no responses have significant meaning for Christians, such as meanings of innocence, defiance, or astonishment.

A Personal Note from the Researcher

Finding research in a communication field that would also have significant meaning was a challenge at first. Research within communication is interdisciplinary by nature. Having said that, I found myself pulled in a variety of directions for my capstone research project from adolescent female perceptions of bread-winning mothers to analysis of what communication factors led to the Jonestown Massacre of 1978. The field of communication has a vast range in regards to research that is directly relevant in today's increasingly social mediated world. However, I found that my interactions with relatives, friends, co-workers, and mentors created an interest in my current research topic.

I noticed a common theme in many of my conversations: *response times*. Why didn't they text me back? How long should I wait before I email them again for an answer? Why do I feel like I have to text my husband that I couldn't text him earlier because I was changing a diaper? I found myself pondering on these same questions but from a different perspective: what is really going on here with the response times for the channels of text messaging, email, and social media posts?

A simple literature review or ethnography study on this topic would not be sufficient in discovering what the masses perceive of response times in electronic communications. I needed statistics, multiple perspectives, explanations of emotions, and interpretations of related situations from those who have experienced them. I knew I would have to begin the journey of collecting data on my own which made me both nervous and excited. But, first I needed to look inward to understand how I would develop this research topic personally.

Before this study, I would sometimes worry about emails I sent to mentors or professionals in my field wondering if I minded all my "p's" and "q's," while waiting for a

response to my request. Now, I take a step back from the situation before jumping to conclusions about response times. Additionally, I find myself being more conscious of my response times to others. I have become more aware of these instances. Overall, I believe acknowledging that response times indeed have an emotional impact has had a positive influence on my life. I want to share this study with others in hopes of bringing them a more peaceful outlook during periods of limbo when texting, emailing, or posting to social media sites. I want to bring about a greater awareness of the effects of response times on our emotions.

Introduction

With technology advancements and the evolution of communication, research on response times in electronic communications needs to be evaluated. Electronic communications have made communication quicker, but their interpretations can vary positively or negatively depending on the response times and communicators. When response times affect communication, individuals can look to chronemics to determine appropriateness. Chronemics has been studied for more than half a century by American anthropologist Dr. Edward T. Hall and through time perspectives by notable psychologist Dr. Philip Zimbardo. Chronemics studies how people perceive and value structured time which often includes response times. Chronemics is not only an effective way to understand how time is connected with communication, but it can also help in understanding how response times make us feel. If chronemics are vital to communication, what area or areas of electronic communications should be researched through a chronemics analysis?

Based on the literature which will be discussed at length during the review section, the areas for chronemic analysis in electronic communication has lacked research in texting, social media, and email outside of the workplace along with emotional reactions to response times. Kalman, Ravid, Raban, and Rafaeli (2006) state that "a quick response is a way to signal immediacy, care, and closeness" and "…users tend either to reply immediately or not to reply at all" (p. 14). They agree that little study has been done on chronemics for online communication or computer-mediated communication. However, a review of the literature did find a 2011 email response time study by Easton and Bommelje (2011) which found that the majority see no response as "inconsiderate or unprofessional" and it almost always had a negative impact on emotional states.

Factors that previously reviewed studies do not directly address are those based on chronemics specifically in text messaging and feelings related to response times in electronic communications. Kalman and colleagues (2006) stressed that further research in chronemics should include studies involving text messaging. Easton and Bommelje (2011) suggested further research should include study on the implications or impact of the perceptions of no response. Additionally, the realization that certain populations, specifically college age students, use text messaging more frequently than other communicators indicates an area that requires research attention.

This paper explains why targeting college age students is vital to studying chronemics in electronic communications, especially texting. An astonishing statistic stated that about "114 million Americans [are] already using smartphones as of July 2012…[which] surpassed the 50% saturation mark" (Kiddie, 2014, p. 66). In this case, Kiddie (2014) is referring to the saturation of the potential market for smartphones which is estimated to be around 225 million users; hence, 114 million actual users show how greatly smartphones have dominated and saturated the potential market. In a 2009 University of Texas at Austin study, they found that the majority of college age students use text messaging daily (Stephens, Houser, & Cowan). By focusing the study on college age students, it supported and produced significant data since the target population consisted of high electronic communication users.

Though there was literature regarding emotional impact of email and texting on self-esteem and stress, the research did not address the chronemics or response time components of computer-mediated communication applications. Computer-mediated communication (CMC) is a reoccurring topic of discussion for chronemics. Lee and Oh (2015) describe CMC as forms of communication between humans that is conducted through the use of networked computers.

Tonkin (2010) mentioned chronemics as a factor in hyper-personal relationships using computer-mediated communication (CMC), yet an explanation of its actual effects was not clear. A 2007 study of control in email found that people get distracted from email tasks because of other electronic messages being received that need attention (Hair, Renaud, & Ramsay). This phenomenon appeared to cause stress among high email users. However, it is possible that these stress levels are exacerbated by what is perceived to be an acceptable response time to messages especially in the workplace.

As seen in the literature review, it seemed only natural that research in chronemics for electronic communication should focus on the effects of response times on one's self-esteem. Smith and Mackie (2007) explain that self-esteem evolves from one's feelings about the positive and negative assessments of their self. However, there was a top paper in media studies recently called "Text Me Back: Response Time as a Relational Predictor across Text and Email Messages" that three Illinois State University graduate students presented at the April 2015 Central States Communication Association conference (Kody Frey, Hook, & Jamie, 2015). The study conducted by Kody Frey and his co-researchers (2015) measured the effects of response times on one's social attraction and affinity-seeking. They found that fast response times in texting and email increased senders' attraction (Kody Frey, et. al, 2015). From their research, Kody Frey, et. al (2015) state that "research should continue examining how chronemics is manipulated, perceived, and understood in an interpersonal context" (p. 24).

Previous studies already on electronic communication chronemics involve quantitative data (Kalman, et. al, 2005 & 2006; Frey, et. al, 2015). The study for this paper used a mixed methods approach as discussed in the methodology section which explains the use of both quantitative and qualitative data analysis along with the data collection process. The data

gathered for this study was through an online survey and the use of focus groups at a private university in Texas.

There happens to be a plethora of internet authors willing to give advice on what chronemics in electronic communication mean which do not include data from either quantitative or qualitative sources. For instance, workplace communicators can get email etiquette advice from business consulting companies like Skywalk Group which provide tactics for dealing with both “The Never Responder” and “The Instant Responder” (2011). Internet author, Hudspeth (2014) gives detailed meanings of response times ranging from 5 seconds to one month. Apparently, responses within seconds mean you have no life and responses that are extraordinarily long mean that person could care less about you. To be frank, the blogosphere entries on chronemics of electronic communications are amateurish and imprecise. From sources such as these, it is clear that academic research should shift focus on chronemics in electronic communications in order to give a factual understanding of this phenomena.

The Research Purpose

The purpose of this research is to explore the chronemics (perception and value of time) in relation to electronic communication. *This study aims to demonstrate that one's perception of electronic communication response times directly relates to hierarchy and priority which can temporarily affect one's self-esteem.* The present study therefore required a survey of college students' electronic communication habits as well as focus groups of discussions centered around response times in relation to emotions. The data collected from the survey and focus groups presented a better understanding of how the chronemics of electronic communication affect those who are heavy users. This same data provided an emotional value to electronic communication habits.

The data and knowledge obtained from this study will benefit society in that individuals who are heavy technology communication based users will have greater insight to how electronic response times are affecting their self-esteem. A greater understanding and awareness of the chronemics of response times for certain types of technology based communications will also emerge from this study. Additionally, this study shows the disparity of perceived response times from people of higher status and how it relates to the emotions of recipients. The following literature review supports the focus of this study which aims to understand the aforementioned factors of technology based communication which will provide insight on how communication can be improved in a global society where users of technology based communication are increasing rapidly.

Through an evaluation of Zimbardo's (1999) Time Perspective theory (TP) studies, peer reviewed journal articles, and CMC chronemic studies, this paper provides an argument that response times in electronic communications indicate priority and hierarchy between communicators which can, in turn, temporarily affect an individual's self-esteem.

Literature Review

The following is a review of several sources dealing with Zimbardo's (1999) Time Perspective theory (TP) and time perspectives inventory and Kalman's and colleagues (2005, 2006) studies of chronemics: how people perceive and value structured time in computer-mediated communication. Each source has been reviewed in depth drawing attention to the necessary information in order to present the need to study chronemics in regards to electronic communications. There is also a review of multiple studies related to email and text messaging which illustrates how current studies have not specifically addressed chronemics in electronic communication and this paves the way for future research in this area.

Time is a complicated notion to study as it has various meanings depending on the way you study it. Time can be studied biologically, culturally, socially, physically, personally, and technically (Bruneau, 2012). Additionally, Hall (1983), in his book *The Dance of Life: The Other Dimension of Time*, also discusses metaphysical time, micro time, sync time, sacred time, profane time, and meta time.

Radford University Professor Emeritus, Tom Bruneau (2012), spent the past 40 years studying human communication through "silence, silences, and silencing" (p. 73). He found that silence is directly related to time and therefore silence should be studied through the means of time. Furthermore, Bruneau (2012) explained that we cannot simply study time based on the clock. But why study chronemics? Bruneau (2012) stated that "chronemics seems *[sic]* to link all other areas of nonverbal communication studies as interrelated, dynamic processes" (p. 73).

Zimbardo's Time Perspective Theory

In order to understand chronemics, it is important that we first look at time basically as past, present and future; or more simply put, the three main time perspectives. The significance

of time perspectives for this study derives from the work of Stanford University Psychologist Dr. Philip G. Zimbardo. Zimbardo and Boyd (1999) explained the time perspectives through their Time Perspective theory (TP), "a fundamental dimension in the construction of psychological time, [which] emerges from cognitive processes partitioning human experience into past, present, and future temporal frames" (p. 1271). Bruneau (2012) supports this by mentioning St. Augustine's *The Confessions* which stated "the past concerns memory processes; the present concerns attention and perception processes; and the future concerns the processes of anticipation, expectation, forethought, etc." (p. 77).

Zimbardo's (1999) Time Perspective theory stems from principles developed by Kurt Lewin (1951), a German-American psychologist. Lewinian thought was heavily influenced by the idea that our experiences relate to past and future behaviors (Zimbardo, 1999). Zimbardo and Boyd (1999) pulled from this Lewinian principle along with "contemporary" psychology's understanding of time and Eastern Zen circular understanding of time. Zimbardo and Boyd (1999) explained that Time Perspective research "continues in, and extends, the Lewinian tradition by advancing a broad conceptualization of TP as a foundational process in both individual and societal functioning" (p. 1271).

The concept of Zimbardo's Time Perspective theory attempts to explain how individuals make decisions, behave, and communicate within their world and with those around them through their personal perspective of time. This personal perspective of time can come in three main forms: past-oriented, present-oriented, and future-oriented (Zimbardo & Boyd, 1999). Zimbardo and Boyd (1999) explained that Time Perspective "is the often nonconscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence, and meaning to those events" (p.

1271). D'Alessio, Guarino, De Pascalis, and Zimbardo (2003) stated that "learned time perspective exerts a dynamic influence on judgement *[sic]*, decision and actions" (p. 335).

Zimbardo and Boyd (1999) conducted a study involving 31 college students who were interviewed and assessed through the Zimbardo Time Perspective Inventory (ZTPI). The ZTPI identifies characteristics of individuals that relate to a past-oriented, present-oriented, and future-oriented time perspective (Zimbardo and Boyd, 1999). Basically, past-oriented individuals evaluate decisions through past experiences. Present-oriented individuals evaluate decisions based on gaining pleasure and avoiding pain at that particular moment. Future-oriented individuals evaluate decisions on goals. Even though Zimbardo's Time Perspective theory is recognized heavily in the field of psychology, it has additional implications in the fields of communication.

For instance, in relation to chronemics in electronic communications, the processes associated with the present and future are of upmost importance. Zimbardo and Boyd (1999) stated that "between the abstract, psychological constructions of prior past and anticipated future events lies the concrete, empirically centered representation of the present" (p. 1272). Since text messaging acts as an alert communication, attention and perception during the present process gives insight to the amount of time one may spend being attentive to texting. However, once a text messaging conversation has begun, the response times of texts between the communicators can then be analyzed through future processes that particularly deal with possible emotions such as anxiety, frustration, dismissal, and the like.

The focus of this thesis draws attention to the delayed or omitted response during electronic communications. After reviewing studies from Zimbardo (1999) and colleagues, it became clear that characteristics of time perspectives would relate to possible explanations of

electronic communication chronemics. For example, the studies of Zimbardo and Boyd (1999) confirmed predictions that individuals who are present-oriented are "more tardy…and more likely to be 'no shows,'" and individuals who are future-oriented are likely to engage tasks as soon as possible (p. 1283). For chronemics in electronic communications this could mean that time perspectives will affect how a person assigns feelings to situations involving delayed or no responses. It could mean that individuals concerned with the future respond quicker and become more anxious or worried when they experience a delayed or no response.

Chronemic Studies on Email, Texting, and Social Media

There are multiple applications used for electronic communications. This paper mainly focuses on email and text messages, but also touches on social media. Email is an extremely common form of electronic communication, especially due to its implementation in the workplace. In fact, Marken (2005) mentions that 65% of U.S. employees spend 1-3 hours of time reading emails on an average workday. With this much time focused on email alone, the chronemics of this medium is valuable to research.

Kalman and Rafaeli (2005) explain that "the chronemics of email are an important non-verbal cue which can convey meaning as well as influence interactional coherence" (p. 1). Kalman and Rafaeli (2005) evaluated over 16,000 emails from Enron employees in regards to response times. They found that silence or no response is "often misinterpreted." According to Cramton (2001) this was due to the fact that "silence was often taken as consent, while in fact it was meant to express disagreement or was a result of inattention" (Kalman & Rafaeli, 2005, p. 1). Rintel and Pittman (1997) coined the term cyberostracism, in which the definition is "failing to receive a reply to an online message" (Kalman & Rafaeli, 2005, p. 1).

People are sensitive to non-verbal cues. Therefore, delayed or no response often leaves a negative impression as with the above-mentioned cyberostracism. Based on findings from Kalman and Rafaeli (2005), the average email response time is 4.6 days with the range being "less than 5 days, to over 14 days" (p. 2). However, there were certain industries whose response times were decreased dramatically from the average to a matter of hours. These industries included medical military, hotels, and customer service (Kalman & Rafaeli, 2005).

In a 2006 study by Kalman and associates, they stated "research on codes such as proxemics and chronemics reveals that cultural and social norms guide our nonverbal behavior, as well as our expectations about the behaviors of others" (p. 3). They went on to say that responsiveness is directly related to communication interactivity (Kalman, et. al, 2006). For instance, the 2006 Kalman study found that the average response latency for email was 28.76 hours, student discussion forums was 23.52 hours, and a social answer site such as Google Answers was 1.58 hours. During the hours of delayed, latency, silence, or no response, the communication interactivity is non-existent; meaning that the communication conversation has ceased until it begins again with response from the other communicator(s). Communication interactivity was found to be non-existent during the time new email messages are downloaded and possibly during "after hours" in workplace scenarios (Johansen, 2004).

A significant finding of this 2006 study was the type of responses given when a responder exceeded the average expected response time for email. When a person responded 2-2 ½ weeks after the original email, some responses included an apology and explanation (Kalman, et. al, 2006). However, there were instances during this time period when a person responded with a follow-up email in reference to the subject matter and not an answer to previous inquiry from the original email request. Furthermore, once a person's response time exceeded a month,

the responder did not acknowledge the original email's request and simply referenced subject matter (Kalman, et. al, 2006). It is relevant to mention that one of the limitations of this study was that the email only encompassed work related emails within a single company. Also, text messaging was not addressed in this chronemic response time study.

Though email is still a useful means to communicate information, text messaging is also a popular method but more for personal or social reasons. Kiddie (2014) explains people like text messaging because it is "unintrusive," and "give[s] the recipient the convenience of responding immediately or waiting until an appropriate time" (p. 66). But what happens when the "appropriate time" for response never comes? This is an issue that is not addressed by Kiddie. The study conducted by Kiddie (2014) focused on whether text messaging will be predominately adopted as the main form of communication in the workplace. Though this study brings to light the adoptability of certain electronic communications, yet the chronemics of such communication and its effects on the communicators need to be analyzed further.

In Brito's (2011) study of Portuguese teenagers, texting was seen as an informational tool rather than a form of entertainment. From his research, Brito (2011) found that texting is often considered "discreet" and rarely censored. One of the findings from Brito (2011) that stood out was the fact that these student participants seemed to have a "sense of power" associated with "their extensive knowledge and familiarity with digital technologies" (p. 526). This showed the importance of sampling a population that is considered to be heavy digital technology users for the study of self-esteem in electronic communication response times. If a youthful population feels a sense of power when discussing electronic communication, it is likely that they will act on this sense of power while communicating through electronic communications, perhaps through response times. However, this notion was not addressed in the Brito (2011) study.

While shifting the focus to text, it is important to emphasize the desire to gather data from college age students, age 18-30. There is a multitude of research efforts which suggests that "university students ages 18-24 are one of the largest cohorts of texters, second only to teenagers" (Crosswhite, Rice, & Asay, 2014, p. 70). Texting is a relatively quick and easy way to communicate and stay connected with others (Crosswhite, et.al, 2014). In a study conducted by Crosswhite, et.al (2014) they found that over 60% of their participants admitted to "sending and receiving more than 1000 texts per month" and surprisingly over 20% of participants admitted to sending and receiving over 5000 texts per month (pp. 72, 75). The focus of their study was to correlate immediacy with texting between young adults and their families.

In the Crosswhite team study (2014), the majority of the 146 participants "claim to never or rarely ignore a text" (p. 72). However, it is important for this review to note that the same study recorded over 20% of participants admitted to ignoring texts sometimes (Crosswhite, et. al, 2014). Crosswhite (2014) explains that Australian researchers have found that ignoring a text is considered rude and there is an unwritten rule in texting "to answer text 'as soon as conveniently possible'" (p. 75). Additionally, over 50% of participants admitted to sending rude texts and claiming they are more likely to be rude over text than in person (Crosswhite, et. al, 2014).

The most significant finding of the Crosswhite team's study (2014) for this review is that 48.8% of participants respond to a family member text within 1 minute and 39% respond within 5 minutes. This data gives a glimpse into the understanding of chronemics in electronic communication as the response times and immediacy between family members who text was measured. If the unwritten rule is to respond as soon as possible, then it appears that college age individuals adhere to this rule as their response times through text is often in a matter of minutes.

It is important to review the channel of social media sites during this chronemics study. Sites such as Facebook have an estimate of over 175 million users worldwide (Mehdizadeh, 2010, p. 357). With this many accounts, social habits and impact of such are surely to emerge from the sheer magnitude of usage alone. A study by Mehdizadeh (2010) found that "individuals higher in narcissism and lower in self-esteem were related to greater online activity" (p. 357). The study involved coding and rating 100 college student's Facebook pages based on the Rosenberg Self-Esteem Scale and the Narcissism Personality Inventory (Mehdizadeh, 2010). However, this study did not research any chronemics between posts which could also be a factor in lowered self-esteem.

Correlations with low self-esteem and social media have been made in studies like Vogel, et. al's (2014) study of frequent Facebook use and its effects on one's self-esteem. The study surveyed 145 college students on their use of Facebook and social comparisons made on Facebook. Additionally, these participants were assessed through the Rosenberg Self-Esteem Scale using a 7-point Likert type scale (Vogel, et. al, 2014). The study found that "participants with more exposure to Facebook tended to evaluate themselves more poorly" (Vogel, et. al, 2014, p.209). This statement supports the findings from the Mehdizadeh (2010) study. The findings presented by Vogel and colleagues (2014) show how social comparison through Facebook use is associated with low self-esteem.

However, Vogel's team (2014) explained that future study is needed to discover other areas where one's self-esteem is being affected by social media sites since social comparison is "just one approach for examining the links" (p. 219). A section that describes the importance of self-esteem as criteria to be studied within chronemics will be discussed later in this paper. Chronemics in social media posts is also an area that this paper aims to address.

A 2009 study of teens' technology communication habits reported 74% of their 280 participants "stated they had an online social site such as MySpace, Facebook, etc." (Pierce, p. 1369). In this study, Pierce (2009) found that almost 50% of teens spend three or more hours on social media sites. The most interesting finding from this study was that the use of social media and other technology based communications was also associated with social anxiety (Pierce, 2009). It is possible that the convenience of response times in social media is related to emotional impact during usage.

There has been some debate about existing Twitter accounts versus active Twitter users. CBS News Money Watch writer Erik Sherman mentioned that there were "974 million existing Twitter accounts," but the number of active users was a little over 240 million (2014, April 14). Even with the discrepancy, the number of active users is still a significant population to research. Twitter is an application that allows individuals and businesses to simply share information with each other. Much of Twitter is based on responses which could be social, political, business related, or personal in nature.

There were some websites such as SimplyMeasured.com which offers a service to calculate response times for businesses and SocialMediaExplorer.com that offers some statistics on certain businesses response times to consumers. However, it was difficult to find any academic research literature on Twitter response times. With this in mind, it is necessary to include Twitter in the chronemics study of electronic communications along with Facebook and possibly even other social media platforms (i.e. Instagram).

Responsiveness and Communicator Relationships

According to Mehrabian (1970) the interest in a person's moods or feelings stemming from specific behaviors is of great importance to many scholars and clinicians. His studies

mainly focus on nonverbal cues and behaviors. It is important to review the findings of Mehrabian's (1970) studies as they have contributed to much of what is known about nonverbal communication especially its various forms of expression. Responsiveness is considered to be the manner or degree in which one communicator is responsive to other by use of verbal or nonverbal communication cues (i.e. nodding to affirm something). However, Mehrabian's (1970) studies found that low responsiveness was linked to depression, loneliness, and social withdrawal. Since the Mehrabian (1970) studies, there have been many advances in electronic communications that encompasses vastly different nonverbal cues which could not have been addressed in his original studies.

There is some research that suggests Computer-Mediated Communication (CMC) is subject to the cues-filtered-out model as many nonverbal cues from normal face-to-face communication are not present. However, silence is a nonverbal cue which is why this paper focuses on the chronemics of response times. In fact, Duthler (2006) explains that the hyperpersonal model and the filtering of nonverbal cues actually puts communicators at an advantage in developing negotiations, relationships, and social tasks. This is because "communicators are strategically enabled to manipulate their identity, time the transmission of their messages, and plan, organize, and edit their communication in pursuit of relational goals" (Duthler, 2006, p. 501).

Kiddie (2014) agrees that email communication became popular due to the rest between replies which allows one to continue participating in current activities. However, like the Gupta, Sharda, and Greve (2011) study, the study from Duthler (2006) focused on the ability to use response times as a way to compose and send more polite messages through email. Chronemics

studies of electronic communication or CMC provide greater insight to the effects of delayed or no response from communicators when an inquiry or request has been made.

A study from Tyler and Tang (2003) describe the Responsiveness Image which is defined as one's projection of a particular image through the use of time in sending, receiving, and replying to email (Kalman & Rafaeli, 2005). The same study found that people "use long response times to project inaccessibility, as well as non-urgency" (Kalman & Rafaeli, 2005, p. 3). In contrast, the Kalman and Rafaeli (2005) Enron email study found that the majority of employees responded to emails within a 24 hour period and very few surpassed 5 days. Yet, their study did not include corporate executive employee email responses which could have shown insight to rank and hierarchy in electronic communication chronemics.

The hierarchy component studied in this research focused on the hierarchy or rank/position held by those in authority. The nature of hierarchy or rank, for this study, could be described as the relationship between a coach and a player or a supervisor and a subordinate or a professor and a student. In order to understand how rank and hierarchy are related to electronic communication chronemics, we must first look at the relationships between communicators. Ekanjume (2010) explains that students at the National University of Lesotho had developed email communication habits amongst specific relationships. For instance, communications to friends and family were predominantly focused on socializing and communications to professors and classmates were academic and issue focused (Ekanjume, 2010).

Aside from status, response times are often seen as a reflection of one's work load or prioritization. For this study, prioritizing/priority relates to the importance one puts on a particular task or how "busy" a person may be at a particular time. Gupta, Sharda, and Greve (2011) explain that the workplace's reliance on email communication has caused "a perception

of a shortage of time" (p. 638). Their main study focused on managing time spent emailing. Though this study did not really address the impact of delayed or no response to an inquiry or request, the idea that email communication takes away from one's perception of personal time could give insight as to why people think a reason for a delayed or no response could be due to the other communicator being too busy.

The type of relationships held with other communicators affects communication structures especially in regards to time (Mason & Leek, 2012). Meaning, the usage of time in communication could be through past, present, and future as previously discussed, it could be through context, or technical like the time on a clock, even still, it could be time that is planned around activities (Mason & Leek, 2012). This is because communicators "engage in different types of communication episodes for different types of exchange" (Mason & Leek, 2012, p. 320). A communicator's view of time in these exchanges is vital to the development and sustainability of the relationship between those involved in the communication (Mason & Leek, 2012).

The Mason and Leek (2012) study focused on the communication between businesses and how these business relationships develop over time through uses of various communication mediums. Their research provided an understanding of how electronic communication allows communicators to socially distance themselves from others. Mason and Leek (2012) explain that "Rutter's (1984) experiments found that as physical presence and visual cues were removed, communication became increasingly psychologically distant, de-personalized, task-oriented and less spontaneous and collaborative" (p. 321). It is easier to use electronic communication as a way to avoid or dismiss people and situations.

During the social interaction analysis of the Mason and Leek (2012) study, the following situation occurred between participants of different status:

> The relationship between the senior informants (#1A and #5B) is particularly distant. […] when informant #5B wanted to communicate with #1A about an increase in price after having recently renegotiated it, he deliberately chose email as it enabled him to inform #1A of the subject without having to be confronted by a potentially strong, negative reaction. Informant #1A on receiving the email ignored it because he knew it was going to cost Company A money. Informant #5B was annoyed. (Mason & Leek, 2012, p. 327)

Mason and Leek (2012) explain that email communication norms involve an expectance of quick responses in relation to short and urgent email communication. Yet, when a communicator feels threatened or upset, the communication norm will be deliberately broken or knowingly controversial (Mason & Leek, 2012). Mason and Leek (2012) went on to say that "individuals may deliberately choose the 'wrong' media to avoid negative situations, or indeed, to provoke one" (p. 330). Therefore, if someone is under the impression that another person's response times are expressing avoidance or dismissiveness, it is possible to link emotions such as anxiousness or frustration to the chronemics of electronic communication.

Further findings from the Mason and Leek (2012) showed that satisfaction with text messaging as a form of communication to exchange information was high, but the satisfaction was low in regards to the overall outcome of text messaging. This supports the notion that individuals prefer to communicate to others using electronic communication which allows them distance and conveniences. However, what have become the benefits of electronic communication are also the disadvantages when it comes to responders and response times. For

example, an individual likes the fact that they can text a co-worker about a task at their leisure but dislikes it when said co-worker responds back at their leisure.

Self-Esteem and Emotional Impact

Just like texting, email also contains norms and expectations. Stephens and associates (2009) stated that "if the norms and expectations for email messages are not met, the repercussions or outcomes may be negative" (p. 306). The scope of the Stephens (2009) study focused on email interactions between students and instructors to analyze familiarity and casualness. Even though the population for this study was limited to a particular group, the statistical findings of email and text usage were significant for this paper. Almost 70% of students and almost 55% of instructors claimed that they send 1-10 emails per day (Stephens, et. al, 2009). However, almost 20% of students indicated that they sent less than 1 email per day while 20% of instructors indicated that they send 10-25 emails per day (Stephens, et.al, 2009). The frequency of email usage alone could shine light on chronemics in email response times.

Additional statistics from the Stephens and colleagues (2009) study in regards to texting were just as insightful as the ones regarding email. They found that over 80% of students but less than 25% of instructors indicated that they use cell phone text messaging daily. Yet, almost 40% of instructors indicated that they never use cell phone text messaging (Stephens, et. al, 2009). These statistics support the use of gathering data from college age students as they clearly tend to use text messaging more frequently than those from generations before them. This study did not address chronemics in the emails between students and instructors in regards to delayed or no responses.

A study conducted by Conner and Reid (2012) found that the average texting delay time was 2 minutes, but the range was less than one minute to 9 hours. Interestingly, the study

showed that "participants receiving 1 text per day took longer to respond than those receiving 3 or 6 texts per day" (p. 317). Additionally, the participants in this study responded to 96% of received texts, which corresponds to the unwritten rules or norms of texting that one should respond as soon as it is conveniently possible. Suler (2010) reminds heavy text messaging users to have awareness of no-replies. People tend to analyze cues in any situation sometimes to their disadvantage. This is true of delayed or no response in electronic communications as a person may spend time worrying about the reason for no reply or begin to feel embarrassed or doubt the closeness of the communication relationship. Suler (2010) explains that no-replies often suggest avoidance or the need for the responder to "think about this some more," so it is best not to jump to conclusions (pp. 359-360). When a communicator jumps to conclusions about no-replies it could impact their self-esteem by making them feel as though the other communicator is avoiding them which could make them feel unimportant or insignificant.

Additionally, a more recent study of self-esteem and text-based communication discovered that "text-based communication[s] were associated with changes in self-esteem" and "[were] more important for self-esteem than face-to-face or phone communication" (Gonzales, 2014, p. 197). It is important to include studies about self-esteem in this review as it part of the focus within this research. Self-esteem is "associated with well-being and quality of life" and a focus for both mental and physical health (Gonzales, 2014). In the Gonzales (2014) study, there was a connection between texting, email, and social media to a positive effect on self-esteem. However, the positive effect of these text-based communications was based on the self-reported increase of self-esteem in diary form throughout the study (Gonzales, 2014).

Jin (2013) explained that "mediated communication, including texting, became a normal and critical part of conducting friendships" (p. 149). Jin's (2013) study focuses on what

individuals perceive as intentional hurtfulness from friends during use of electronic communication like texting. The study found that "hurtful texting is common among friends and has a significant impact on how the friendships unfold" (Jin, 2013, p. 153). However, the study only analyzed written hurtful text and did not address possible hurtfulness from delayed or no response.

In light of the information presented throughout the literature, it is apparent that both quantitative and qualitative data should be analyzed to aid in the research of chronemics of electronic communication or CMC. Many of the previously mentioned studies focus on quantitative data. By introducing qualitative data, the research gains both personal and social meaning. An appropriate way to approach research on electronic communication chronemics was through an explanatory sequential mixed methods design which is discussed in the following section.

Methodology

Silence is a non-verbal communication cue that is often researched or analyzed through direct observation (Mehrabian, 1970). While reviewing the literature on chronemics in electronic communications pertaining to mainly email and text messaging, there was very little study focusing on the aspects of response times which are not as easily observed as physical actions. In fact, Kalman and colleagues (2006) stressed that further research in chronemics should include studies involving text messaging. The best way to study this phenomenon would be through a mixed methods approach because it allows both statistical and individual personal data to be identified. By collecting both quantitative and qualitative data, the study was able to gauge how chronemics in electronic communications temporarily affect one's self-esteem through both generalized and personalized perspectives.

The decision to focus this study on a mixed methods approach was simply made because previous studies such as the ones from Ekanjume (2010) and Kalman and Rafaeli (2005, 2006) only focused on quantitative data analysis from email records. Other researchers and scholars took the qualitative route with descriptive discourse, like Jin (2013) used in the qualitative inquiry including open ended questions for self-reporting. However, many others chose case study or experimental study (Zimbardo & Boyd, 1999; Stephens, Houser, & Cowan, 2009; and Conner & Reid, 2012) which, due to limitations of resources, is not conducive to the study presented in this paper. Therefore, a mixed methods approach was chosen. Creswell (2014) describes mixed method research as research that includes both quantitative and qualitative data to provide "a more complete understanding of a research problem" (p. 4).

Yet, Mason and Leek (2012) used a mixed methods approach through their communication artifacts, practices, and business relationships study, as did Brito (2011) in his

study dealing with Portuguese teens and various technologies such as texting and email. Both had interesting and significant results through the use of mixed methods in their studies. The mixed method approach allows a cross analysis between the quantitative and qualitative data which would be best to explain the phenomenon of electronic communication response times and related emotions.

More About the Mixed Methods Approach

A mixed methods approach is exactly what it sounds like: a mixture of methodological approaches. It is the use of both quantitative and qualitative methods to approach research. According to Creswell (2014), the mixed methods approach emerged in the mid to late 1980s as researchers and scholars alike saw that the two traditional approaches often contained biases. By utilizing quantitative and qualitative data in a study, the researcher potentially "neutralizes" weaknesses (Creswell, 2014).

Creswell (2014) states, "the core assumption of this form of inquiry is that the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem than either approach alone" (p. 4). Which is why the words "generalized" and "personalized" were used earlier in this paper, as the quantitative data generalizes the phenomenon and the qualitative data personalizes it. The focus of this study is heavily based in the nature of time which is often a difficult concept to describe. In fact, researchers like Zimbardo and Boyd (1999) and Crosswhite, Rice, and Asay (2014) used exploratory methods in their studies involving chronemics since the nature of time had yet to be explored in the capacities to which they were researching. However, the mixed methods approach gives identifying principles to the chronemics relation in electronic communications and emotions through use of an *explanatory sequential mixed method design*.

The nature of the explanatory sequential mixed methods approach is quantitative data that can be explained or elaborated through additional qualitative data (Creswell, 2014). For instance, if a research study needs more clarification on the analysis results from their quantitative data, then they will likely find answers in a cross analysis from qualitative data. So there is an intentional sequence of gathering quantitative date, analyzing it, and then gathering qualitative data for cross analysis.

The main challenge facing most mixed methods, specifically the explanatory sequential mixed methods approach, is concerned with validity. Researchers using this method must understand the importance of scoring and analyzing the quantitative data in order for the qualitative data to have a valuable impact (Creswell, 2014). Within explanatory sequential mixed methods designs, researchers may neglect future areas for research as well as undervalue or overvalue certain criteria of the data such as demographics (Creswell, 2014). For this study, an academic chair and review board were in place to ensure proper scrutiny of presented data analysis.

Researchers like Zimbardo and Boyd (1999) and the Crosswhite team (2014) used exploratory methods in their studies involving chronemics. Since there has been little study on the topic of chronemics in electronic communications and how it affects emotions, it is necessary that the study first collect quantitative data to generalize the phenomenon and then incorporate a cross analysis with personalized qualitative data. Creswell (2014) states that “a typical procedure might involve collecting survey data in the first phase, analyzing the data, and then following up with qualitative interviews to help explain the survey responses” (p. 224). This is exactly the type of explanatory sequential mixed method design that this chronemics in electronic communications study follows.

The Selected Population of Study

As alluded to in the early part of this thesis, there is that remarkable statistic which stated about "114 million Americans [are] already using smartphones as of July 2012…[which] surpassed the 50% saturation mark" (Kiddie, 2014). In a 2009 University of Texas study, they found that the majority of college age students use text messaging daily (Stephens, Houser, & Cowan). For these reasons, this study targeted college age Americans who are heavy electronic communication users (i.e. those involved in frequent email, text, and social media). By focusing the study on college age American students, it was likely that the study would produce significant data since the target population would be data rich in content in the contexts of professional and social communication.

The sample of this study was therefore narrowed down to college students at one religious, private university in the state of Texas. The rationale for including students from this university was due to the willingness of said school to allow the study to be conducted. This school was initially able to provide at least 30 students for the survey and 15 students for the focus groups. However, because there was potential for a much higher sample size, the survey and focus groups surpassed those numbers. The population from this university within the Central Texas region has a geographic basis while still being able to provide some diversity to the data.

Professors in the communication department of the university and a few other professors from various disciplines were contacted to see if their students would be interested in participating in this study. Several professors from the communications department responded to the study request; many of whom taught multiple sections of classes. The opportunity to participate in the study was offered to all sections of the classes of the professors who approved

the study request. Any student who volunteered for the study and was willing to sign the consent form was allowed to participate in the study. The only requirement was that they had to be enrolled as a student at the university and use some form of electronic communication. All participant volunteers met these requirements.

Structuring the Quantitative Survey

During biblical times, advisors saw the importance of taking a census of the population in order to gain information about their people as well as a simple count of people (Book of Numbers, 1 & 3, New Revised Standard Version Catholic Edition). Although the U.S.A. still practices the use of census to this day, more modern and sophisticated ways to collect data have evolved. One of these data collection tools is the survey. Surveys have become staples in data collection for most research fields and are a common form of research (Creswell, 2014). Surveys allow the researcher to gather generalized information about the topic. Hair, Renaud, and Ramsay (2007) supported the use of surveys in their study, "The Influence of Self-Esteem and Locus of Control on Perceived Email-Related Stress," which was published in the journal *Computers and Human Behavior*.

By distributing a survey to the selected population for this study, it provided the potential to make a connection between specific criteria and the phenomenon itself. A survey on response times in electronic communications offered an economic option in gathering data. The survey also expedited the data collection process which allowed for more time to focus on analysis. The survey was constructed by using a combination of dichotomous questions, open-ended questions, and Likert scale. The questions for the online survey were constructed based on previous conversations with friends, relatives, and colleagues about response times in electronic

communications. Additionally, some of the questions were constructed in order to gather demographic information from participants for specific analysis.

The survey was distributed to selected communication courses at a private university in Texas during July 2015 based on the consent of professors. The survey was open for about one month in order to allow students ample amount of time to fit the survey in their schedule should they choose to complete it. The survey was an internet based survey using Qualtrics software for matters of convenience. The professors were allowed to offer extra credit for their course should they choose to do so. However, the researcher offered no incentives or benefits for completing the survey. A professor who decided to offer extra credit for this survey did so on their own accord.

Survey Instrumentation

The construction of the online survey was of the researcher's own design. The survey was designed to ask questions that would discover answers at the heart of the research question. There were 38 questions total. The survey for this study contained 5 questions which used a modified Likert scale, 5 dichotomous questions, 10 multiple answer questions, 5 open-ended questions, and 13 closed-ended questions while gathering demographic information. See Appendix A for a sample of questions constructed by the researcher used in the survey.

The Likert scale is a common form of data collection in research that has high reliability and validity in its scoring. In fact, noted psychologist Zimbardo (1999) and his colleague Boyd (1999) used a 5-point Likert scale during their time perspectives research. Likewise, workplace chronemics researchers Ballard and Seibold (2004) used a 6-point Likert scale to gather data for their study of the impact of time on organizational structures. Jin (2013) also used a Likert scale in the hurtful texting study which claimed reliable results. The reliable results using the Likert

scale was correspondingly supported in the casual email study from Stephens, Houser, and Cowan (2009).

Within the survey, the criteria in question included the following: demographics, expected electronic communication response time frames for specific communicators (i.e. family, friends, significant other, supervisor, and any other contact), expected electronic communication response time frames for participant, frequency of use of certain electronic communication mediums (i.e. text messages, emails, and social media), and emotional states during instances of no response. The survey was structured in a way that data concerned with texting is asked first, then questions about email were second, and questions about social media came last.

Demographic information was scattered throughout the survey. The questions focusing on communicators, frequency, and emotions were constructed by the researcher based on themes which came about in general, normal conversations with relatives, friends, and co-workers over several months while the research topic was in the early stages of development. Questions were asked in the following styles: matrix tables, open-ended text box entries, multiple answer selection, and traditional yes, no, and sometimes. However, the questions varied in format throughout the survey in order to discourage monotony and lethargy from the participants.

Structuring the Qualitative Focus Groups

Since this study used an explanatory sequential mixed methods approach, it was necessary for several focus groups to occurr after the survey data was collected and analyzed. Easton and Brommelje (2011) agree that focus groups are a useful tool in collecting data for studies within communication and have been since the 1920s. Easton and Brommelje (2011)

explain that an advantage of focus groups is “the synergistic effect generated by the interaction among group members, which encourages and stimulates new insights” (p. 48).

The focus group sessions took place at a religious, private university in the state of Texas in classrooms that were available during July 2015. Individuals participating in the focus group sessions were volunteers from the cohort of the survey, but potentially new participants in this study. The school had at least 3 focus group sessions containing at least 5 students but no more than 12. There was the potential for the focus groups to include more than 5 participants which ultimately happened. It is possible that professors decided to give extra credit for participating in one of the focus groups. However, the researcher did not compensate any individuals for their participation in this study.

During the focus group sessions, the conversations were audio recorded. This allowed the researcher to analyze the conversations for themes related to the topic of study. See Appendix B for sample questions designed by the researcher for the focus group sessions. The sample questions were constructed by the researcher based on what might have been answered in the online survey. These questions aimed to facilitate “real” and in-depth answers related to similar questions found on the online survey. The state of Texas does not require consent for audio recording in public places. However, in conjunction with the guidelines of the Institutional Review Board, consent from participants was collected before the start of the focus group sessions. The researcher took some written notes as the conversation progressed in the focus groups.

The type of data that was collected during the focus group sessions included descriptions of situations involving no response from electronic communication conversations with identified communicators, expression of specific emotions during these instances, possible explanations of

reasons why people do not respond, and statements of expected time frames for responses within specific types of electronic communications. The data collected during the focus groups was used to explain any connections between chronemics in electronic communications and emotions that were found during the quantitative survey analysis as the answers given in the focus groups were more detailed and progressive in nature.

Results

There were a total of 55 undergraduate students who were enrolled in communication courses at a religious, private university in the state of Texas who voluntarily participated in and completed the online survey. This sample population for this study included 27 females (49.1%), 26 males (47.3%), and 2 participants chose not to disclose their sex (3.6%). The participants were required to be 18 years of age or older in order to volunteer to participate in the study. Target age of 18-25 was reached as the average age of participants was 19.93 (*SD* = 5.37). The reason for a high standard deviation in age is that one of the undergraduate participant's was 57 years of age. From the participant pool, 55% were from Texas, 7% were from the Midwest region of the U.S., 4% were from the east coast of the U.S., 3% were from the West coast of the U.S., 7% were from countries outside the U.S., and 24% did not disclose their state or country. The racial/ethnic heritage of the participants is best described in the pie graph below or Figure 2.

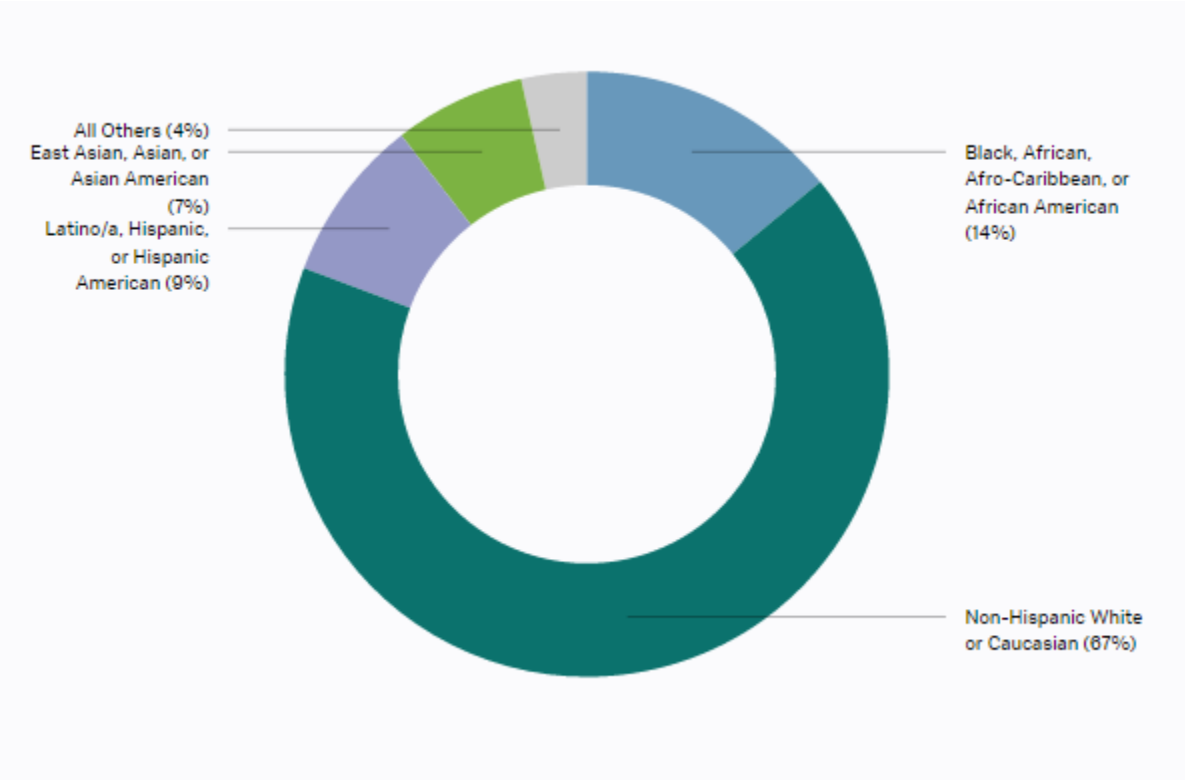

Figure 2. *Survey Participants' Racial/Ethnic Heritage.* A pie graph showing the online survey participants' racial/ethnic heritage breakdown.

The "All Other" section consists of 1 participant who identified as Native American or Alaskan Native and 1 participant who identified as Middle Eastern, Arab Descent, or Arab American. The racial/ethnic heritage total is 101% because 2 participants selected more than one race to indicate bi-racial heritage.

The data concerning type of phone used indicated that all participants used some sort of smartphone. For instance, 84% used an iPhone, 7% used a Samsung Galaxy, 5% used a Samsung S3, 2% used an Android, and 2% used a LG Volt. Additionally, the target population of heavy electronic communication users was met as the majority of the population used text messaging, email, and social media at least daily: 19% felt like they were using electronic

communication constantly, 26% used electronic communication on an hourly basis, and 23% used electronic communication daily. The other 32% used electronic communication weekly or less frequently than weekly.

There were six focus groups held, at the request of the professors, to allow enough opportunities for their students to participate. For the focus groups, there were a total of 54 participants with an average of 9 students per group. The focus groups consisted of n = 24, 44.4% female, n = 25, 46.3% male, and n = 5, 9.3% undisclosed. Each focus group lasted between 10-15 minutes depending on how well the group engaged the discussion. The following questions were asked of each focus group:

1. Think about a time when you emailed or texted someone who was close to you, like a friend or relative, and they did not respond to you even though you were expecting a response. Was there any context to the situation for their lack of response? How did it make you feel?
2. Think about a time when you emailed or texted someone who was of a higher rank than you, like a supervisor, and they did not respond to you even though you were expecting a response. Was there any context to the situation for their lack of response? How did it make you feel?
3. Have you ever "stewed" over a situation that involved a lack of response through electronic communication? If so, for how long?
4. Be honest, have you ever intentionally not responded to another person's electronic communication? If so, why?
5. Do you get depressed or upset when no one responds to your social media posts?

6. What do you think is the reason for a person's lack of response in electronic communications?
7. After this discussion, do you think it's possible that response times in regards to electronic communications can affect one's self-esteem temporarily? Why?

For sake of repetitiveness and space, from this point out, results related to the focus group questions will be denoted by their corresponding number.

Focus Group Questions #3 and #4

Focus group question 3 gives insight into how chronemics in electronic communication affect our emotions. Students noted "stewing" or staying upset over no response in electronic communication from another person. The amount of time spent "stewing" varied; some said a few minutes, a few hours, a few days, or a week. Most notable are phrases that some students expressed during the focus group. The way students talked about no response in electronic communication indicated that the practice is offensive and therefore acceptable to punish the offending person. One student said, "I hold a grudge," when it came to staying upset over no response to electronic communication. Another student said, "I'll remember it," when someone doesn't respond to an important social media post. Additionally, one student said, "a day sounds fair," in regards to how long someone should "stew" over no response to their electronic communication. By using the word "fair," it is suggested that justice is sought during instances of no response in electronic communication.

However, the response to the corresponding question 4 was the most interesting because it seems to contradict students' feelings from question 3. Not only was the answer "yes" practically unanimous, (only one focus group had one student answer "no" to the question) to question 4, but the exact phrase "all the time" was used in 50% of the focus groups. This is the

most interesting finding as it suggests that people purposely offend others by not responding to electronic communication, even though they find the practice to be especially offensive. This particular piece of data from the focus groups supports the data obtained from the survey. The survey showed that *n* = 43, 78% felt that not responding to someone's electronic communication was rude. Those who did not feel that it was rude not to respond to someone's electronic communication was *n* = 5, 9%. The other 13% said they were not sure. Astonishingly, however, *n* = 51, 96% of survey participants admitted to not responding to someone else's text message on purpose, and *n* = 22, 42% of survey participants indicated that they purposely had not responded to another person's email.

Communicator Relationship and Response Time Data

From the survey, data concludes that the closer the communicator relationship, the less amount of time was allotted for a response. For example, 29% of responders indicated that they expected a text message response from their significant other immediately, 51% expected their significant other to respond to their text message within a few minutes, and 20% expected their significant other to respond to their text message within the hour. Conversely, the data indicates that hierarchy between communicators influences the expected response times. For instance, the following statistics show the expected text message response time from one's supervisor: only 1.9% of responders expected an immediate response, 9.1% expected a response within a few minutes, 32.7% expected a response within the hour, 49.1% expected a response within the same day, 3.6% expected a response within a few days, and 3.6% did not care when they received a text message response from their supervisor. This data was supported by data from the focus groups since participants assumed someone of higher ranking like a supervisor would be busy and needed more time to respond.

For the online survey, responders were asked to indicated how receiving no response through text message, email, and social media posts made them feel. They were able to select multiple answers from the following: angry, anxious or worried, dismissive, frustrated, guilty, sad, scared or afraid, unimportant or insignificant, not bothered/do not care, jealous, embarrassed, or other (enter in your own descriptive emotion). Overall, feeling anxious or worried was experienced by 49.1% of responders in regards to no text message response from their significant other. Feelings of frustration came next from 36.4% of responders and 27.3% of responders felt angry. Additionally, 25.5% of responders felt sad and 25.5% of responders felt unimportant or insignificant when their significant other did not text them back at all.

However, when we look at hierarchy in the communication relationship, the data seems to imply that higher ranking positions receive more leeway. For example, 36.4% of responders were not bothered or did not care if their supervisors never responded back to them, 23.6% felt frustrated, 16.4% felt anxious or worried and 16.4% felt unimportant or insignificant. When data from email communication was analyzed for emotional descriptions, there were some similarities to the texting data, however, more responders indicated that they were not bothered/did not care about receiving no response to email from their significant other (31%).

Focus group discussions supported this data. During the focus groups, responders indicated that someone of higher rank is just too busy and does not have time to respond. The responders discussed that higher ranking responders can make them feel unimportant because they have higher priorities. Yet, many expressed frustration at those of higher ranking taking longer to respond since responding to people was “part of their job,” and sometimes the answers they needed from them were time sensitive.

Social Media Findings

Participants were asked about their social media preferences. Participants were able to select all social media platforms to which they currently have accounts; multiple answers were allowed. The breakdown of social media platforms used by responders is illustrated below in a line graph, Figure 3.

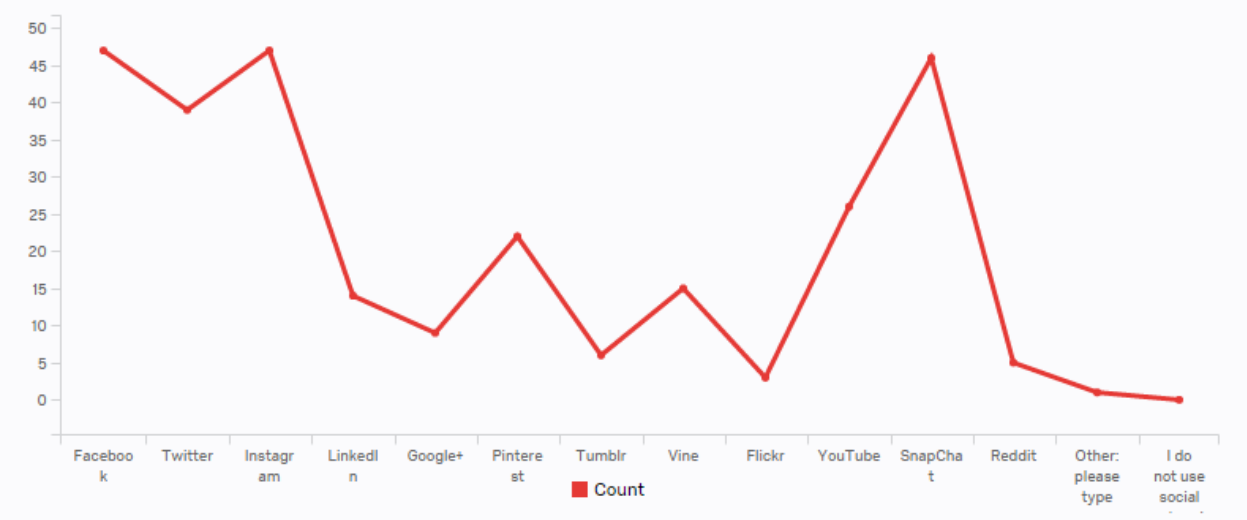

Figure 3. *Survey Participants' Social Media Platform Usage.* This graph indicates how many participants have open accounts with a particular social media platform.

There are 4 platforms that stand out by having the most users and those are Facebook, Twitter, Instagram, and SnapChat. When it came to getting no response to their social media posts, 49.1% of responders were not bothered/did not care, 31% felt unimportant or insignificant. The other emotion indicators each had less than 10 total responders.

This data is supported by the focus group discussion as the majority of responders did not seem emotionally affect by receiving no response to their social media posts. However, some responders indicated that they would delete a post if no one responded to it. A couple responders laughed at the idea that people could become sad or depressed if no one responded to their social

media post. Yet, 36.4% of responders expressed that they felt their social media posts were important and 56.4% of responders said that they do not expect responses to their social media posts but that it would be nice if people did respond.

Self-Esteem and Emotional Effects Findings

In regards to self-esteem, the survey and focus groups provided great insight. One of the survey questions asked responders if they believe response times in electronic communications can temporarily affect a person's self-esteem to which 74.5% of responders said yes. The focus groups seemed to explain and support the findings from the survey question. One responder said that receiving no response from someone "makes you question yourself like who am I to this person." Another student expressed that no response makes them wonder if they did something wrong. One female expressed a little bit of anger toward no responders and concern for the situation. She expressed the idea of "what if that was my last text." Others expressed feelings that response in electronic communications validates them.

Additionally, focus group participants mentioned that no response to electronic communication "ruins your day" and they feel they are being prioritized but didn't make the cut. Many of the focus group participants stated that texting is easy and doesn't take that long. For instance, one female was quoted in saying, "it takes like 5 seconds to send a text. It makes me think why should I expect anything more from you." However, there were still a few students that said they don't take it personally if someone doesn't get back with them. One student mentioned that only insecure people would let something like no response get to them.

Ultimately, 38.2% said they felt response times affect their emotions, 23.6% did not feel that response times affected their emotions, 34.5% felt that response times affect their emotions only sometimes, and 3.6% did not answer this question. Additionally, when asked if they would

feel that they would be more mindful about electronic communication response times 60% said yes, 16.4% said no, 20% said maybe/not sure, and 3.6% did not answer this question. This was supported by the focus groups as the overwhelming response was that our emotions are, or at least can be, effected by response times in electronic communications.

Discussion

Easton and Bommelje (2011) suggested that further research should include study on the implications or impact of the perceptions of no response. Additionally, the realization that certain populations, specifically college age students, diversely use electronic communications, especially text messaging, more frequently than other communicators indicates an area that requires research attention. An explanatory sequential mixed methods approach was an appropriate way to approach data regarding the study of the effects of electronic communication chronemics on self-esteem as it allowed for the phenomenon to be generalized through quantitative analysis and then personalized through qualitative discourse. This approach gives a preview of a factual understanding of the phenomena of chronemics in electronic communication effects.

The participants in this age group would likely be considered millennials. They were the target for this study. Given their ages, the majority of participants were born in the 1990s. Based on a survey of their communication habits, they are heavy technology users. CEO of Oracle Corporation, Mark Hurd (2015), and FOX Business writer, Rocco Sannelli (2014) believe that millennials are future oriented (Hurd, 2015). Zimbardo's (1999) Time Perspectives Theory, explains that future oriented individuals are conscientious and prefer consistency. Studies from Zimbardo and Boyd (1999) found that future-oriented individuals "felt pressed for time" (p. 1281). Additionally, future-oriented individuals have "a sense of 'time crunch' and a need to use time wisely to fulfill the many tasks they engage in and to reach their high standards" (Zimbardo and Boyd, 1999, p. 1281). These insights on how future-oriented individuals perceive time reflects similarly in the data of this chronemics in electronic communications study. Participants

indicated that responding to someone electronically is easy and does not take very long, so for most participants they did not understand why communicators would choose not to respond.

Yet, a valuable find from my study found that though students perceive no response in electronic communication to be rude, the majority of them admitted to purposely not responding to another person's electronic communication. Zimbardo and Boyd (1999) explain that future-oriented individuals have a self-centeredness. The participants appear to be more concerned about how response times affected themselves instead of how their own response times affected other people. Interestingly, my study found that these millennial individuals associated anxiety and worry the most frequently in regards to emotions from no response in electronic communication. This contradicts the findings of Zimbardo and Boyd (1999) as their Time Perspectives Inventory showed a weak correlation between future-oriented individuals and anxiety.

The purpose of this research was to provide an understanding of how an individual's emotions are affect by the chronemics of electronic communications. The study connects hierarchy and prioritization as factors relative to chronemics in electronic communication effects. Additionally, my study suggests that criteria for future-oriented individuals may need to be reassessed for individuals who are heavy electronic communication users. This study is merely a small stepping stone into research for the communication sub-field of chronemics.

Limitations and Future Research

As with most research, there are limitations and this study was no different. The sample size for this study was only a small fraction of the population needed to be studied. In order to get a better understanding of the U.S. population in the area of chronemics, a much larger sample size is needed with a longer duration of testing. The study limited itself to millennial

undergraduate students. However, in order for a more comprehensive study, I suggest expanding the study to include teenagers (the #1 group of electronic communication usage), and those considered to be "Baby Boomers." The data from varying generations would give a better perspective if age is a factor in the effects of chronemics on individuals.

Similarly, future studies including parents and their children who communicate through electronic communication would be valuable. This is due to the fact that this study found a correlation between hierarchy in communicator relationships and effects of chronemics on these relationships for individuals. Families tend to have a natural hierarchy which should be explored in future chronemics in electronic communication studies.

Though the previously mentioned research possibilities could provide significant understandings, there was one particular area for research that emerged during the focus groups discussion. This was gender differences and bias in electronic communication chronemics. For instance, during the one of the focus groups, a female responder said that "it's a guy thing" to not respond when discussing no response in electronic communication. When this statement was made, many of the other female responders agreed nonverbally by nodding their heads or verbally by saying "yeah," or an affirmative "uh huh." Conversely, in another focus group, a male responder indicated that females were more likely to get upset about no responses in electronic communication. It would be interesting to see how genders view chronemics in electronic communication and whether their perceptions of this create an overall bias amongst the genders.

During this analysis, racial/ethnic heritage and regional information was not used to indicate whether groups formed similar responses to questions. It is possible that there are cultural factors which influence how one is affect by chronemics in electronic communication.

Additionally, socio-economic data was not collected from participants. There is potential influence on participants from this factor as well.

Conclusion

Though there have been some research studies in electronic communications and chronemics during the past decade, there is very little that explains how individuals' emotions are affected by this phenomenon. Gathering data from college students has provided some insight from a preferred population. By using a mixed methods approach, this study was able to generalize and personalize the responders' data. The data indicated that chronemics in electronic communication affect our emotions and self-esteem especially if the communicator is close to us or of higher ranking. This study allowed a preview into the various areas for future research on this topic.

In conclusion, this study presents data that suggests communicators' perceptions of response times in electronic communication can affect one's self-esteem based on the communicator relationship. The closer the communicators' relationship the less time is allowed for response. Additionally, when this rule is violated, the communicator often feels heightened emotions that affect their self-esteem. Furthermore, if the communication relationship is controlled by hierarchy or some sort of ranking system, the communicator experiences emotions that relate to self-doubt. Understanding the dynamics of response times, communication relationship, and emotional effects allows heavy communication users a greater awareness of how electronic communications influence their lives.

The review of time perspective studies from Zimbardo (1999) which explained some of the reasoning of data responses from future-oriented individuals, Kalman's et. al (2005 & 2006) chronemic studies of CMC, and various electronic communication studies thus far has presented

substantial information in order to justify the continued research and study of the effects of electronic communication chronemics on individuals' emotions and self-esteem. Additionally, the continued study in this area presents an opportunity to provide awareness of electronic communication chronemic effects which may or may not be apparent to the masses at this time.

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Appendix A

Below are sample questions from the survey of this study. They include modified Likert scale questions, both open-ended and closed questions along with questions designed to gather demographic data. The symbol [ ] indicates a potential open-ended text-based response for participants. The full online survey was accessed at the following link, but is now currently closed: https://baylor.qualtrics.com/SE/?SID=SV_eb2r8eO8ari3Rqd.

1. **How often do you communicate through the following means?**

	I feel like I am doing this constantly.	Hourly, except when I am sleeping.	Only a few times each day.	Not everyday, but definitely several times a week.	A few times each month.	Very rarely.	I do not communicate through this mean.
TEXT MESSAGING	○	○	○	○	○	○	○
EMAIL	○	○	○	○	○	○	○
SOCIAL MEDIA POSTS	○	○	○	○	○	○	○

2. **Do you think it is rude when one person does not respond to another person's electronic communication (i.e. text, email, etc.)?**

- ○ YES
- ○ NO
- ○ Maybe, I am not sure.

3. How soon do you expect a TEXT MESSAGE response from the following?

	Immediately, especially if I know they have their phone on them.	Within a few minutes.	Within the hour.	Same day.	Within a few days.	Whenever. It really does not matter to me.	I do not communicate through text messages.
FAMILY MEMBERS	○	○	○	○	○	○	○
FREINDS	○	○	○	○	○	○	○
SIGNIFICANT OTHER	○	○	○	○	○	○	○
SUPERVISOR	○	○	○	○	○	○	○
ANY OTHER TYPE OF CONTACT	○	○	○	○	○	○	○

4. What type of phone do you own?

5. Who do you typically communicate with via text messaging? Check all that apply.

- ☐ Classmates
- ☐ Co-workers
- ☐ Family Members
- ☐ Friends
- ☐ Professors
- ☐ Significant Other
- ☐ Supervisor
- ☐ Other: please type answer in below.

- ☐ I do not communicate through text messages or my phone does not have texting capabilities.

6. **From which US state are you from? If international, please type the name of your resident country.**

7. **When one of the following communicators does not respond to your TEXT MESSAGE within your expected time frame, how does it make you feel? Check all that apply.**

	Angry	Anxious or Worried	Dismissive	Embarrassed	Frustrated	Guilty	Jealous	Sad	Scared or Afraid	Unimportant or Insignificant	It does not bother me. I do not care.	Other
FAMILY MEMBERS	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
FRIENDS	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
SIGNIFICANT OTHER	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
SUPERVISOR	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
ANY OTHER CONTACT	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

8. **When the following communicators TEXT you back but not in a timely manner, do you expect a justification or reason for their delayed response?**

	YES	NO	SOMETIMES
FAMILY MEMBERS	○	○	○
FRIENDS	○	○	○
SIGNIFICANT OTHER	○	○	○
SUPERVISOR	○	○	○
ANY OTHER CONTACT	○	○	○

9. **What is your age?**

10. **When the following communicators are TEXTING you, what do you feel is an appropriate amount of time to TEXT them back?**

	Immediately.	Within a few minutes.	Within the hour.	Same day.	Within a few days.	Whenever I feel like it.	I do not communicate through text message.
FAMILY MEMBERS	○	○	○	○	○	○	○
FRIENDS	○	○	○	○	○	○	○
SIGNIFICANT OTHER	○	○	○	○	○	○	○
SUPERVISOR	○	○	○	○	○	○	○
ANY OTHER CONTACT	○	○	○	○	○	○	○

11. When you are unable to respond to the following communicators in a timely manner through TEXT, do you feel the need to TEXT a justification or reason for your delayed response? (i.e. "Sorry, I was running errands," or "sorry, I was at the movies with my phone on silent.").

	YES	NO	SOMETIMES
FAMILY MEMBERS	○	○	○
FRIENDS	○	○	○
SIGNIFICANT OTHER	○	○	○
SUPERVISOR	○	○	○
ANY OTHER CONTACT	○	○	○

Appendix B

Below are sample questions to be used during the focus group sessions in order to engage participants in discussion revolving around the topic of chronemics in electronic communications and its effect on emotions. These questions will aid in explaining data found during the quantitative survey data analysis.

1. Think about a time when you emailed or texted someone who was close to you like a friend or relative and they did not respond to you even though you were expecting a response. Was there any context to the situation for their lack of response? How did it make you feel?

2. Think about a time when you emailed or texted someone who was of a higher rank than you like a supervisor and they did not respond to you even though you were expecting a response. Was there any context to the situation for their lack of response? How did it make you feel?

3. Have you ever "stewed" over a situation that involved a lack of response through electronic communications? If so, for how long?

4. Be honest, have you ever intentionally not responded to another person's electronic communication? If so, why?

5. Do you get depressed or upset when no one responds to your social media posts?

6. What do you think is the reason for a person's lack of response in electronic communications?

7. After this discussion, do you think it's possible that response times in regards to electronic communications can affect one's self-esteem temporarily? Why?