# BREAKS IN CONNECTEDNESS? THE MEANING AND EXPERIENCE OF RESPONSE DELAYS IN MOBILE COMMUNICATION

By

Rebecca Anne Gray

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Information and Media—Doctor of Philosophy

2018

## ABSTRACT

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Individuals are communicating with one another to an increasing extent on mobile phones, which have enabled them to carry on conversations with others from nearly wherever they are and throughout whatever they are doing during the day. Maintaining connections with others through mobile phones contributes both to a need for synchrony in communication across mobile devices as well as to perceptions of increased accessibility to others - expectations that others are available to us as needed or desired. However, feelings of accessibility to others do not always signify true, uninterrupted access to others, as individuals may be unavailable to communicate for a number of reasons *or* unresponsive even when available.

In order to understand the meaning of response delays in mobile interaction for individuals' sense of connectedness to others, I interviewed emerging adults to engage in discussion with interviewees about their experiences of delayed responses from communication partners, unpacking the impact these delays may or may not have had on their sense of connectedness to them.

I found that our cohort's response time expectations were heavily informed by prior communication experience with communication partners and social norms, as posited by expectancy violation theory (Burgoon, 1988), which lays out a framework for predicting antecedents to nonverbal behavior expectancies and outcomes of violations to those expectancies. Perceived availability of communication partners was another

recurring, important driver of responsiveness expectations. In close dyads, it appears that availability expectations may be even more precise than they would otherwise be with other communication partners given the increased access to information they have about others' schedules as well as the more extensive prior communication experience. With these more precise availability expectations come potentially more severe or concerning reactions to expectancy-violating response delays.

The lack of a shared environmental context in mobile communication can render it impossible to know another's true availability to respond, no matter how "fine-tuned" or precise one's expectations of availability are. This introduced a new layer of complexity in individuals' interpretations of response delays, especially in cases where availability of a communication partner was *presumed* but a response was still not received. Reactions to response time violations included emotional reactions and compensation behaviors (such as modality switching) as predicted by the expectancy violation framework. We did not observe evidence that repeated response time violations hurt relationships with primary, typically close communication partners in any detectable way to the interviewees. Most response time violations with main communication partners that were discussed with participants were forgiven, described post-hoc as excusable instances of non-response based on later-realized circumstances.

Based on these interviews and our findings, I recommend future work to continue to unpack the complexity of availability, seeking to better determine the impact of misconceived notions of availability on the evaluation of response delays. I also propose that future work dig more deeply into the role of communicator reward valence on the interpretation of and reaction to response delays in mobile communication.

ACKNOWLEDGEMENTS

I'd first like to thank those who have been instrumental to my research and writing process – not only throughout the course of preparing my dissertation but also more generally throughout my education in the doctoral program at MSU. Thank you to the members of my dissertation committee: Drs. Saleem Alhabash, Casey O'Donnell, and Charles Steinfield. Thank you to the sundry other academics who have participated in my valuable training (and basis for my current livelihood!): Drs. Nicole Ellison, Cliff Lampe, Jessica Vitak, Yvette Wohn, Robert LaRose & Joseph Walther. For the "third place" work space and consistent encouragement and sound advice, many thanks are owed to Dr. Jeff Hancock. For the peers in my program who made the program fun and encouraged me to the end, I thank Vitak, Yvette, Janine, and Brandon.

To Shelia Cotten, I am endlessly grateful. Thank you for not giving up on me. Thank you for your patience, encouragement, check-ins, edits, advice, and time. When you took me on as an advisee, neither of us knew it would take this much time or coaxing to get me through. I would not have gotten to the finish line without you.

Finally, there is a small but mighty contingent of supporters from outside academia who have helped me get here. I'm grateful for my family who have been supporters of mine from Day 0 and who have been the most excited to call me "Dr. Gray". To my partner Dan: when you entered my life, I was at my lowest with respect to believing that I could finish, and you helped me turn it all around. I am especially grateful for your care, love, support and encouragement in all things. I can't thank you enough. And to my numerous San Francisco friends and colleagues who were my most

ardent cheerleaders these last few months, your words were heard and felt and helped me more than you could ever know.

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# CHAPTER 1: INTRODUCTION

The purpose of this dissertation is to examine the meaning and role of response delays in mobile communication among emerging adults. Mobile devices have become an increasingly widespread communication tool (Pew Research Center, 2018). Mobile phones afford us the ability to be highly connected, remaining in contact with others throughout the course of the day (Baron, 2008), and this frequency of contact with others throughout the day is associated with higher senses of intimacy and immediacy, fostering a sense of "connected presence" between communicators (Licoppe, 2004). In essence, texting and other kinds of mobile communication enable individuals to feel as though they never really need to be out of touch.

As the ubiquity of mobile technologies has increased, so have our expectations of others' accessibility and availability to respond to messages (Ling, 2012). The fast exchange of messages facilitated by mobile devices has reinforced individuals' use of this technology to coordinate and maintain constant contact with others, contributing to these expectations of perpetual availability of our mobile contacts (Ling, 2012). The use of mobile phones for communication in various relationships may not only drive fast response time expectations for mobile communication channels (e.g., text messaging) but also for other modes of communication that can occur utilizing mobile devices (e.g., e-mail). As the communication landscape changes and affords nearly all Americans the ability to be perpetually tethered to their mobile phones and be perceived by others as "accessible," research is needed to evaluate expectations of response time and consequences of perceived breaks in connectedness between communicators.

When responses to messages are not within the amount of time a message sender may expect, problems may arise. Response delays in communication have been conceptualized as expectation violations (Kalman & Rafaeli, 2011; Sheldon et al., 2006) and have been empirically associated with negative relational outcomes; research shows that perceived delays in responses to outgoing messages can create conflict and heighten anxiety (Robbins & Afifi, 2011), negatively affect impressions formed of others (Hall, 1959; Walther & Tidwell, 1995; Burgoon & Hale, 1988), and lower sense of intimacy perceived between individuals (Walther & Tidwell, 1995).

Across all kinds of relationships, there is the potential for a lack of response to convey disinterest or a lack of regard for another (Tu, 2002), which can be problematic for one if not both communicators. Delayed responses in text messages between parents and their children – teens in particular – have been empirically tied to anxiety and panic on behalf of the parents, who interpret the silence as their children potentially being in danger (Robbins & Afifi, 2011).

The embeddedness of mobile phones in our society reinforces these expectations of perpetual availability and may drive (over)dependence on both the technology and those with whom it connects us (Hall & Baym, 2011). Because of the potential negative consequences of committing response delays, individuals have had to develop ways of trying to get around these temporal response expectations, in essence often "hiding" from others who want to access them. For example, individuals have reported trying to get around expectations of availability by deploying "away" statuses, delaying responses, and crafting stories to protect their time and attention

(Gray & Ellison, 2013; Hancock, Birnholtz, Bazarova, et al., 2009; Vanden Abeele & Roe, 2008).

Despite the various negative potential consequences associated with response delays, no research to date has provided a comprehensive picture of how response delays are experienced by individuals or of what response delays *mean* to them. It is important to get a full picture of how response delays are perceived and understood by communicators through investigating how individuals describe their own expectations of response time in mobile communication, which may be contingent on their mobile device use and other situational and relational factors. While individuals are increasingly available via their mobile devices, the role of this perceived perpetual connectedness to others and reciprocally heightened expectations of others' availability may be impacting the way in which we interpret the silence of a lack of response. Exploring the expectations of response time and outcomes of a delayed response time in the social realm will help us to understand the implications of expectations of "perpetual contact" (Katz & Aakhuus, 2002).

In the following sections, I elaborate the research questions of the dissertation and outline a plan for executing the research. In Chapter 2, the related literature is reviewed and conceptual framework is presented; the related work discussed covers the present day embedded nature of mobile communication, the role of increasing mobile device use in changing modes of coordination and time-keeping, mobile phone use among emerging adults (sample of interest), known norms and expectancies of response time in mobile communication and computer-mediated communication more broadly, and previously observed outcomes of response delays. Chapter 2 ends with a

summary of the main research goals and proposed research questions. In Chapter 3, I give an overview and justification of the selected methodology, elaborate on the methods, including sampling and recruitment techniques, and validity considerations. I provide an overview of the data collection outcomes as well as an overview of the analysis techniques used to synthesize findings. Findings and discussion are interwoven to support an evolving understanding and reflection of core themes throughout Chapter 4. Limitations and areas for future investigation are discussed in Chapter 5, and I culminate this work in the Conclusion.

## CHAPTER 2: RELATED LITERATURE AND CONCEPTUAL FRAMEWORK

### Mobile Communication Defined

Mobile communication has been described as "how people and groups use devices and services that support mediated communication while the user is in physical motion" (p. 3, Campbell, Ling, & Bayer, 2014). Individuals are interacting through pieces of technology and are not necessarily physically co-present. Essentially, mobile devices (such as cellphones) are portable, enabling individuals to exchange messages regardless of location. Mobile devices, now having nearly fully penetrated the American market (with 95% of U.S. adults owning personal cell devices, and 77% owning smartphones in particular, as of February 2018; Pew Research Center, 2018), travel with us from one place to another, serving as "second skins" often worn on our bodies (Campbell, 2008). Baron (2008) argues that the ubiquity of these technologies among much of American culture and respective ease of connecting with others have encouraged norms around perpetual availability and heightened expectations of quick responses from communication partners. Indeed, mobile communication researchers argue that connectedness via mobile devices has become a societal norm (Bayer, Campbell, & Ling, 2016); Bayer, Campbell and Ling (2016) refer to these particular norms as "connection norms".

Within mobile communication there are a few different methods through which individuals can communicate – voice calls and text messages are two types of communication more traditionally associated with mobile communication. Additionally, voice mails can be delivered to phone users when they were not available for phone calls, and Internet-capable phones, such as smart phones, enable individuals to check

other kinds of electronic communication from their phones, such as e-mail or web-based chat messages (like those within Google Hangout or Facebook Messenger). The different methods available within mobile devices for communicating can be differentiated in part by their temporal structure or afforded synchronicity. Voice calls occur in real-time and thus are considered synchronous, whereas text messaging has been previously conceptualized as asynchronous (Baym, 2010). However, text messaging has the potential to be semi-synchronous, such as when both individuals are on their phones rapidly exchanging messages (Glaser & Tucker, 2004) and simultaneous availability on mobile phones is a growing assumption (Ling, 2012). Expectations of quick responses are in part driven by awareness of how fast computer-mediated messages can be transmitted (Feenberg, 1989).

The synchronicity of the medium bears implications for the connectedness it fosters. As Baym (2010) summarizes, “synchronicity can enhance the sense of placelessness that digital media can encourage and make people feel more together” (p. 8). Interaction also tends to feel more personal and immediate through synchronous messaging (Baym, 2010). Thus, a potential constraint of breaks in synchronous communication or of asynchronous communication is that the same degree of immediacy and togetherness cannot be achieved or may be threatened.

**Functions of Connectedness in Mobile Communication**

Recent research has stressed the role that the mobile phone has played in heightening expectations of response time. The mobility of our communication media facilitates person-to-person interaction regardless of the communicators’ locations and seems to “offer the promise that we never need to be out of touch with our loved ones”

(p.11, Baym, 2010). In part, our expectations of access to others may derive from the kinds of communication for which we use mobile devices. Earlier reports from the Pew American Life and Internet Project (2014a) indicate that – aside from using their phones to make and receive calls – sending and receiving text messages is the most highly performed activity on a cell phone (81% of cell phone owners). (More recent reports show that the array of activities people opt to perform from their phone – such as shopping, finding dates, looking for jobs, and reading books – is rapidly expanding; Ranie & Perrin, 2017). Even in situations in which individuals are performing other activities, such as communicating with others face-to-face, they are able to send and receive text messages 'under the radar' to maintain contact with non-present others (Ling, Bertel, & Sundsøy, 2012). Ling (2012) asserts that the degree to which mobile communication is increasingly embedded in our lives and relationships is because it "gives us an individualized communication device that we use for both the large- and small-scale interactions that form the fabric of everyday life" (p. 3, Ling, 2012).

A newer prominent use of mobile phones is the use of phones to "micro-coordinate" and develop or adjust plans real-time through a series of quick messages as opposed to finalizing plans in advance of an event (Ling & Yttri, 2002). Microcoordination has been increasingly emphasized as a behavior that is both related to connectedness between communicators as well as a driver of availability expectations. This activity refers to individuals' exchange of quick messages from mobile devices to arrange plans, check in, and generally coordinate and stay connected with one another (Ling, 2004). Performing this kind of communication removes the necessity of agreeing on places and times to meet well in advance of events and allows

individuals to iteratively work out details via text messages and calls (Ling, 2004). In this way, it is argued that our coordination within social interactions is now afforded more flexibility and nuance than before (Ling, 2012). However, these kinds of interactions also require some base level of synchrony to be effective. If one of the communication partners is not available when plans are being developed or changed, then problems may arise.

Mobile phones can also be used as tools to perform other functions, such as time-keeping devices, calculators, and ways to access the Internet for other needs. Approximately 77% of all Americans own smartphones capable of accessing the Internet (Pew Research Center, 2018a), and those who use their phones heavily for Internet access have been singled out as generally more attached to their phones (Pew Research Center, 2014a). They are more likely to sleep next to their phones, check frequently for messages, and consider cell phones beneficial to their lives; however, these individuals are also more likely to report difficulty focusing on a single task without being distracted and giving others undivided attention (Smith, 2012).

The extreme convenience and utility of the mobile phone cannot be understated. All of these aforementioned functions and beyond feed into individuals' own increased use, and a main result is that the mobile phone has become an *assumed* piece of technology for many segments of American society as opposed to a luxury.

**Outcomes of the Embedded Mobile Phone in Society**

Richard Ling, a prominent researcher of the impact of mobile phones on society, asserted that the ubiquity of mobile phones has led mobile phones to be taken for granted (Ling, 2012). Arguing that it has become part of our "social fabric" and integral

to our expectations of communication with others, Ling asserts that we have expectations of reciprocal use of phones and expectations of availability. The ability to reach out to others in our social spheres at any time or from any place is paralleled by the expectation that we, too, are always available (Ling, 2012). The newer inclination to expect that others in our close social circles are perpetually available is reflected in the idea of "connected presence" (Licoppe, 2004). Licoppe (2004) found that whereas we might previously have saved news, information, and feelings to share with others for a longer communication event, we now do not wait to share small details about our lives, engaging in continual interaction with others via technology. Connected presence in its true essence refers to the idea that we are never really out of contact and that we expect our communication partner to be there. Ling (2012) points out that a lack of a response can call this sense of connected presence into question, leading us to believe that something is amiss.

The mobile phone's ascension to critical mass has facilitated a new degree of connectedness with others; however, the expectations that surround use of the medium are complex. Expectations of perpetual availability are not viewed as positive among many Americans today (Ling, 2012; Duggan & Smith, 2012). Guilt and pressure to respond to mobile phone messages from close friends have been identified as significant sources of dissatisfaction in friendships (Hall & Baym, 2011). Pew Internet and American Life Project polled individuals about what they considered the worst aspect of owning mobile phones, and the most frequent answer, reported by nearly a quarter of all respondents, was "that they are constantly available and can be reached at any time" (p. 2, Smith, 2012). To some extent, mobile phone users today appear to

be suffering from feelings entrapment; you have to choose between meeting the expectations of your communication partners (thus perpetuating these expectations) and risking the potential negative outcomes of not meeting the expectations. However, whereas one might assume that feelings of pressure to respond might predict higher stress, research on *social media* use and stress has indicated that typical users do not feel more stress due to presumed peer pressure to participate, a fear of missing out, or more pressure to "keep up" than they might otherwise (Hampton, Rainie, Lu, Shin & Purcell, 2015). It's unclear whether the receipt of direct messages (via SMS, Facebook Messenger or otherwise) may be more likely correlated with stress from pressure to respond than general participation in social media activities.

Mobile phones are not merely embedded at a social level but also at a psychological level (Bayer & Campbell, 2012; Vincent, 2006). Bayer and Campbell (2012) assert that for many, checking their mobile phone has become so automatized that individuals check their mobile devices without realizing it, as though it were a reflex. In later work by Bayer, Campbell, and Ling (2016), these kinds of automatic behaviors were referred to as "connection habits". According to recent data collected by the Pew American Life and Internet Project, about 67% of cell phone owners report checking their phones for alerts and messages without even receiving any notification of a call or a message (Pew Research Center, 2014a). The sub-conscious embeddedness of mobile phones has also been associated with the experience of "phantom vibrations" – episodes in which individuals believe they have heard or felt their phone vibrate when it has not done so (Drouin, Kaiser, & Miller, 2012). Ultimately, these kinds of "connection habits" are made possible through contextual triggers embedded in media and social

structure (LaRose, 2010). One example of a trigger for phone checking proposed by Bayer, Campbell, and Ling (2016) is a sociotemporal trigger (or "timing cue"), which they describe "is based on one's personal expectations for staying connected and current connection salience" (p. 141). Additional research has found that being without one's mobile device can lead to strong feelings of panic and anxiety as it serves a vital role in maintaining social connections (Vincent, 2006).

On average, the population that currently engages in the most mobile communication in the United States is teenagers and young adults (Pew Research Center, 2018a). Mobile communication serves as a way for teens and young adults to expand their independence, access peer-based support, and explore other facets of their individual identities (Ling, 2009), and thus, these individuals may be among the most familiar with challenges in mobile communication related to being highly connected and available via their devices.

**Emergent Adults and Mobile Device Use**

Emerging adulthood has been proposed as a unique period of development (Arnette, 2000). Individuals in their late teens to twenties, with particular emphasis on those aged 18-25, typically fall into this age group. According to the most recent U.S. Census, those aged 18-24 comprise approximately 9.6% of the U.S. population (U.S. Census Bureau, 2011). The transition from adolescence to adulthood has been conceptualized as its own developmental stage due in part to large demographic shifts in educational pursuits and later marriages and parenthood (Arnett, 2000). Emerging adulthood is noted as a period of life most conducive to identity explorations as well as

a time when individuals feel as though they are in *between* adolescence and true adulthood (Arnett, 2000).

Although there is much diversity in the demographic characteristics of emerging adults, Arnett (2000) argues that this cohort is unified by the instability and changing nature of many of these, particularly with regard to residence change. In a study of the memory of life events, older adults tended to remember more life events (such as marriage and new parenthood) within the age range of 18-35, signifying important developmental events likely to occur within this period of time (Martin & Smyer, 1990). As Arnett (2000) points out, however, the late teens and early twenties are increasingly a period of change and exploration and less of a period of adjusting to permanent adult roles as "marriage and parenthood are delayed until the mid-twenties or late twenties for most people" (p. 469). Cultural and social structure limit the degree to which all young adults are able to use this period of their life for independence and identity exploration, and all individuals within this age group are not engaging in exploration to the same extent (Arnett, 2000).

Individuals presently aged between 18-25 are among the first to have grown up "exposed to technological forms of communication from an early age" (p. 22, Tomlin, 2011), and today emerging adults represent the most prominent group of mobile phone users for communication in U.S. society, with 100% owning any kind of cell phone and 94% owning smartphones in particular (Pew Research Center, 2018a).

Peer-based interaction has been identified as a supportive factor in individuals' transitions from childhood to adulthood, much of which presently occurs through text messaging between peers beyond adolescence (Ling, 2009). Among teens, texting

facilitates the shift from the family group to friend groups (Ling, 2009; Ling & Yttri, 2006). Mobile phones, and texting in particular, enable teens to maintain discrete yet open links to their close peers (Ling, 2009) as well as manage romantic exploration and communication with others (Lenhart, 2009; Lenhart, Ling, Campbell, & Purcell, 2010). Among teens, coordination is one of their major uses of the mobile phone, allowing them to be quickly in touch with their peer groups as needed (Ling, 2004). Teenagers are also some of the first demographics among which mobile researchers identified microcoordination behaviors between communicators (Ling & Yttri, 1999), and young adults aged 18-25 are among the most likely age groups to engage in microcoordination (Ling, 2009), Ling argues that access to mobile phones among this demographic group aids with the emancipation of teens and the weaning of parental control as they shift into adult life (Ling, 2004; 2009).

The emerging adult age group contains those most likely to use their mobile phones to send and receive texts, access the Internet, and send and receive e-mail (Duggan, 2013; Lenhart, Purcell, Smith & Zichkur, 2010), although the usage gap between emerging adults and older age groups has shrunk considerably over the past decade (Pew Research Center, 2018a; 2018b). Other research has supported this claim, in particular finding that individuals between ages 16-22 in Norway send and receive more texts than any other demographic. The most prolific same-aged text messagers are nineteen year olds who “generate 80 times more texts than one would expect if every member of society texted equally” (p. 285, Ling, Bertel & Sundsøy, 2012). In the United States specifically, young adults aged 18-29 have the highest cell phone ownership rate (100%) with 94% owning smartphones (Pew Research Center,

2018a); for comparison, 98% of adults aged 30-49 and 94% of adults aged 50-64 own smartphones[1]. Emerging adults in the United States seem to have very similar mobile phone use when compared with non-adult teens who have been identified as very frequent text message senders as of 2010 (88% of all teen cell phone users), with one in three teens sending more than 100 text messages per day (Lenhart, Ling, Campbell, & Purcell, 2010). Text messaging friends is an activity over half of American teens spend time doing daily (Lenhart, 2015). Sharing phone numbers for texting is the most common way many teens share initial contact information with new friends. Similarly 80% of teens prefer text messaging to reach their close friends (Anderson, 2015).

At this point in time, the growing role of mobile devices in American society – particularly among emerging adults – is uncontestable. Mobile devices have become an increasingly taken-for-granted, expected piece of technology that many individuals use to maintain perpetual contact with others, in some cases with such habituated use that interaction with the phone occurs without even thinking. This age group was posited as one of the groups for which the prevalence of mobile phones and high expectations of fast response times are a taken-for-granted part of daily life (Ling, 2012). With device adoption increasing across other age cohorts and this notion of taken for "grantedness" extending more broadly, focusing research on this cohort of young adults in particular stands to give us a lens through with to observe interpretations and reactions to delayed responses that may be yet-to-come for other age groups and societies.

[1] Note: At the time of data collection for this study, 98% of Americans aged 18-29 owned cellphones, whereas only 74% of adults aged 30-49 and 49% of adults aged 50-64 owned cellphones (Pew Research Center, 2014a).

A lack of a response from communication partners in an environment when responses are expected, and promptly at that, has the potential to result in different consequences for the individual involved. Response delays have been more systematically studied with respect to time's role in American culture and its role as a salient nonverbal cue in communication across other kinds of computer-mediated communication (CMC); thus, a background on extant literature on response time and response delays will now be provided.

**Extant Literature on Response Time & Response Delays**

Although much technology-mediated communication is posited as lacking nonverbal cues (Daft, Lengel, & Trevino, 1987), many kinds of mobile communication (such as text messages) contain automatic time stamps, indicating the time a message was sent (Döring & Pöschl, 2009). According to Döring & Pöschl (2009). These time stamps can be considered nonverbal cues open to interpretation by communicators. Response time constitutes the amount of time that passes between the transmission of a message from one person (the *sender*) and the receipt of a response from another person (the *responder*), and past research has demonstrated that long response times (or response latencies) are often perceived as *delays* (Kalman et al., 2006; Sheldon et al., 2006; Walther & Tidwell, 1995).

Humans' ability to develop and maintain relationships, as well as our ability to work successfully with other individuals, is contingent on effective communication, in which one is receiving both the verbal and nonverbal messages – such as temporal cues – necessary to decipher the meaning of interactions with others and respond appropriately (Hall, 1959). Time is but a dimension in which interaction takes place

(Hall, 1959); yet, because life is an ongoing series of interactions, time is an inherent component of *every* interaction and one to which humans are cognitively attuned. The nonverbal cues generated by time and individual management of time are meaningful in all of our relationships - formal and informal (Döring & Pöschl, 2009). Time-based cues are also referred to as *chronemic* cues, Burgoon and Saine (1978) defined chronemics as "the study of how we perceive, structure, and react to time and of the messages we interpret from such usage" (p. 99). Interpretations of the time-based cues of messaging vary culturally; Americans, for example, are driven by time and view it as a material commodity (Hall, 1959; Levine, 1997). Culture informs the temporal "rules" we abide by or break; for example, within the United States, those with higher statuses are the ones who are seen by appointment and are able to be late, causing others to wait – but not vice versa (Levine, 1997). Because culture – sometimes unknowingly – impacts individuals' behavior, attitudes, and relationships with the environment (Hall, 1959), impressions can be both consciously and subconsciously formed about others and their interpersonal management of time.

Time-based cues of messaging, such as response delays, have been studied across many fields, such as human-computer interaction (Avrahami et al., 2008), organizational and industrial studies (Kalman & Rafaeli, 2011; Sheldon et al., 2006; Walther & Tidwell, 1995), social psychology (Miller & Berg, 1984), communication (Burgoon & Saine, 1978; Liu, Ginther, & Zelhart, 2002), education (Tu, 2002), and even in realms such as healthcare (Street & Buller, 1987). Technically speaking, a response delay (or reduced response time) is the *void* of any communication act for a period of time, but verbal language is not the only method by which humans communicate; in his

book on nonverbal communication, *The Silent Language,* anthropologist Edward T. Hall (1959) asserts “Time talks. It speaks more plainly than words. The message it conveys comes through loud and clear…It can shout the truth where words lie” (p. 23). Along these lines, Watzlawick, Beavin, and Jackson (1967) asserted the impossibility of *not* communicating when they said “one cannot not communicate,” signifying that we are always sending messages of some nature, whether we are aware of their transmission or not.

To this end, individuals cannot *not* respond to a message, spoken or mediated. The delay in a response or silence *is* a response that communicates something to the other interaction partner (Watzlawick et al., 1967). Response time is an inherent quality of all types of communication - be it spoken or technology-mediated; in spoken communication, response latencies are present in the form of pauses or, in some cases, silence (Kalman et al., 2006). In all kinds of computer-mediated communication – including mobile communication --, pauses naturally vary more than they would in face-to-face settings due to the natures of the media themselves, particularly when they are asynchronous (Kalman et al., 2006) and come with a variety of interpretations by communicators.

Cultures impact how individuals develop temporal expectations and interpret time-based cues of messaging (Hall, 1959). Differences in the rules for and interpretation of these cues, such as response time, can also exist between individuals within the same cultures, contingent on the technological platform being utilized, the communicative context, and relationships of those communicating.

### Factors Influencing Response Time Expectations in Dyadic CMC

According to Roese and Sherman (2007), *expectancies* are "beliefs about a future state of affairs" (p. 91) that are usually derived from information derived from past experience, social learning, the popular media, mood and so on. Expectancy violation theory (EVT; Burgoon & Hale, 1988) asserts that interaction partners have pre-established expectancies of each other's communication behaviors based predominately on social norms and previous communication experience with others as well as communicator characteristics, and context. Of note, in the explication of the initial version of this theory, Burgoon (1978) explained that the concept of expectations had been left purposefully open to apply to either cognitive expectations or behavioral predispositions:

> "The term 'expectations' has been left primitive in this system to avoid the controversy over whether expectations are highly cognitive and conscious or simply a label for predispositions to behave in a given way, which is a more behavioristic interpretation. Both kinds of interpretations can be used without altering the proposed model" (p. 134).

Ultimately, with respect to nonverbal response time as well as other nonverbal communication behaviors, the expectancies concept within this theory is a critical component which emphasizes that the behavior of communication partners is not viewed as random and that behaviors that deviate from what is expected will be reacted to differently (Burgoon, 1978).

One of the most important contextual variables to consider within mobile communication may be the technological platform involved as this impacts whether or not others are presumed to be available to respond and how quickly they can do so.

The synchronous or asynchronous nature of technological platforms in part dictates how fast messages can expect to be exchanged. Persistent online conversation is comparable to traditional spoken communication in terms of time as text-based communication seems to follow the same distribution of response times between spoken messages as there are pauses and silence in face-to-face communication (Kalman et al., 2006). Feenberg (1989) argued that expectations of quick responses are in part driven by awareness of how fast computer-mediated messages can be transmitted. He argues that usually delays are negatively interpreted (e.g., as rejection or indifferences) as “there is no technical excuse for silence” (p. 263). The synchronicity afforded by various media largely impacts how quickly responses from communication partners are expected and when delays in responses will be perceived.

Asynchronous media are those that do not involve simultaneous availability of communication partners; messages are sent by communication partners from their technological devices, and interactions are typically spread out over time (Walther, 1996). E-mail is one such example of asynchronous communication, and work has been executed to both attempt to evaluate typical response latency patterns in e-mail communication as well as to investigate the consequences of non-normative response latencies. Kalman et al. (2006) analyzed a large collection of organizational emails, in order to look for patterns in e-mail response times. Upon analysis of this large data

repository, Kalman et al. (2006) found that responses followed a logarithmic pattern, with most responses being received within one day of the sending of outgoing messages and very few responses being received after 12 days had passed. The authors asserted that response latencies surpassing the 12-day mark could be considered online silence as the likelihood of receiving a response after 12 days was extremely low (Kalman et al., 2006). Subsequent work by both Sheldon et al. (2006) and Kalman and Rafaeli (2011), revealed that e-mail response times of 1 day did not have any significant impact on impressions of communication partners, whereas delays of two weeks or longer were associated with negatively impacted impressions of message responders. A clear implication of this line of research is that, within e-mail-based communication, responding within 1 day is normative and not expectancy-violating, whereas latencies of two weeks or more were not-normative.

In interactions carried out on mobile devices, which are presumably rendering individuals perpetually accessible to others, there is a high expectation of synchronicity and quick responses despite the fact that individuals may not always be simultaneously available. As previously mentioned, text messages are considered a semi-synchronous or "near-synchronous" method of communication because there *can* be gaps of several minutes, hours, or days elapsed between messages in the same conversation (Avrahami & Hudson, 2006; Glaser & Tucker, 2004). Synchronous computer-mediated communication consists of the immediate exchange of messages over technological devices. The latencies between message exchanges may be longer than those experienced in spoken face-to-face communication if only because it can take longer to type a message than to submit it. Latencies may also be longer when there are

technical issues, such as a loss in the network service required to transmit messages, or when individuals temporarily step away from or exit the communication. Instant messaging (IM), or "chat," is a synchronous medium in which two people are typically sitting at computers and exchanging messages back and forth nearly simultaneously; some scholars place the medium at "near-synchronous" (or "semi-synchronous") status because there *can* be gaps of several minutes, hours, or days elapsed between messages in the same conversation (Avrahami & Hudson, 2006).

An investigation of response times to instant messages in an organizational setting revealed that typical response latencies in IM communication were 5 minutes. Upon further investigation, the researchers found that this fast response time was typically indicative of employees being engaged in an "IM session," or "a set of messages with a certain time delay between one another" (p. 735, Avrahami & Hudson, 2006). Avrahami & Hudson (2006) acknowledged, however, that response times to IMs were not always as expeditious in messages attempting to initiate chat sessions, and thus, in synchronous communication settings in which communication partners have not already begun to engage in conversation, there may be greater response latencies and potential for perceived delays.

Text-messaging or (short message service; SMS) seems to approximate synchronous interaction (Glaser & Tucker, 2004), but it is not like IM communication for which both individuals would typically be seated at computers in order to converse. In text-messaging, and mobile communication more widely, individuals may not be immediately available because both may not have their phones "on them" or around them (although increasingly they do [Campbell, 2008]), and other issues such as limited

cellphone service coverage and limited battery life could restrict the degree to which we can be (or expect others to be) simultaneously available.

However, within the past decade, changing norms of mobile phone use have impacted much of what previous computer-mediated communication research has demonstrated about norms of response times across synchronous and asynchronous media. For example, e-mail and instant messaging services (such as Google Chat and Facebook Messenger) can now be accessed from mobile devices in addition to text messages (Kisiel, 2011). Additionally, individuals are increasingly dedicated to keeping their mobile phones charged and on their persons, rarely turning them off (Duggan & Smith, 2012). The pervasiveness of mobile phones, and the perceptions of accessibility to others it brings, is likely shifting our expectancies towards faster response times, regardless of the kind of media involved.

**The Interpretation of and Reactions to Response Delays**

One limitation of present research on response delays in mobile communication and computer-mediated communication more broadly is that it is unclear when response latencies become response delays. When a specific time of an event or expectation is set, such as the time of a scheduled conference call, it is clear that individuals who call in after the designated time are delayed. However, in an exchange of messages between two people with no explicit time requirements or appointments, expectancies of response times are less clear. In these cases, expectancies represent ranges of possible behavior and not precise points. Thus, it is necessary to ask by what process an individual perceives or determines that a response is late. Research on response times in CMC and the influence of delays on relational outcomes has

distinguished between normative response times and violated response expectancies (Kalman & Rafaeli, 2011; Sheldon et al., 2006). However, in the present communication climate where individuals are generally presumed to be available on their mobile devices, it is unclear how individuals decide between what is a normal response time and what is a response delay.

The ability for perceived delays in communication to create unwanted consequences has been documented across a number of contexts. Ultimately, people evaluate how others sequence their behavior and tend to valence some temporal behaviors – such as these temporal response violations – as either pleasant or unpleasant (see Walther & Tidwell, 1995). According to expectancy violation theory (EVT), behaviors that violate expectancies to a large enough degree draw more attention to the message and message sender, resulting in the individual engaging in sense-making about the violation (Burgoon & Hale, 1988). In other words, the communicator is prompted to evaluate the implication of the violation on the relationship between him or herself and the message sender.

Past research utilizing the EVT framework has shown that increased (expectancy-violating) conversational distance is associated with reduced intimacy, whereas decreased conversational distance between two interaction partners is associated with increased intimacy (Burgoon & Hale, 1988; Burgoon, Newton, Walther & Baesler, 1989). When applying these insights to expectancy-violating response delays in mobile communication, it may be that delaying response times to another's messages or communication attempts reflects increases in the conversational distance between oneself and one's communication partner. A question this research may help

to answer is whether individuals perceive response delays they experience as increasing conversational distance and as inhibiting intimacy.

Interactions can be thrown into upheaval when messages are not being effectively exchanged, causing communicative processes to break down (Kalman et al., 2006). Not only can a lack of response lead to coordination issues between individuals engaging in mobile communication, but a delay in response can also be interpreted by message senders trying to understand what the delay means. In American culture, Americans tend to highly value promptness. A lack of promptness can be interpreted as irresponsibility or taken as an insult (Hall, 1959). For example, a study conducted by Baxter and Ward in 1973 found that the time at which someone arrived at an appointment (fifteen minutes early, on-time, or fifteen minutes late) affected credibility ratings of this individual. Eighty-four secretaries rated individuals on four dimensions of credibility - sociability, dynamism, competence, and composure - and found that subjects rated the late individual as less sociable and less competent than on-time and early individuals and as less composed than the on-time individual (Baxter & Ward, 1973).

The lack of promptness of a reply to a message, such as by a pause or silence, likewise leads to predominately negative outcomes in interpersonal communication. For example, later research on face-to-face conversations showed that long pauses prior to speaking may indicate that someone is not really paying attention or being responsive (Miller & Berg, 1984). Response delays have also been linked to interpretations of withdrawal (Burgoon, Parrott, Le Poire, Kelley, Walther, et al., 1989), a lack of

importance, or disliking (Hall, 1959; Levine, 1988) when there is not a high level of comfort or intimacy in the relationship.

In romantic partnerships, lower interactivity between partners is usually associated with negative impacts, but not always. Caruso (2009) found that higher levels of uncertainty and lower intimacy are related to the exchange of fewer messages between partners. Similarly, in a study on the handling of conflict in romantic relationships, Scissors and Gergle (2013) found that response latencies via CMC had the potential to exacerbate arguments, making romantic partners feel even more upset, angry, or anxious; however, these emotions were juxtaposed with the perspectives of other individuals, who actually appreciated the ability to let time pass between the exchange of messages, providing the opportunity to reflect and cool down. This may be related to the level of intimacy already present in the relationship.

In cases of higher intimacy, response delays can sometimes have the opposite effect and be viewed as positive (Burgoon, Buller, & Woodall, 1989). For example, Burgoon et al. (1989) assert that individuals in more intimate relationships may actually interpret a response delay positively, as the delay in response conveys comfort in the relationship and reduced need to respond quickly. Whether or not this positive interpretation of response delays holds true in the fast-paced mobile interaction occurring today is unknown. Research has additionally shown that even in cases of negatively perceived expectation violations, when the relationship with the other communicator is something the individual values or that has the potential to help satisfy future goals, negative violations are more likely to be forgiven or rationalized than with other communication partners (Gregory, 2013).

More recent studies of response delays in e-mail exchanges have demonstrated a relationship between response times and *immediacy,* which promotes feelings of psychological closeness between individuals (Ledbetter, 2008); faster responses are associated with higher ratings of immediacy with the communication partner. The same may be true of messages exchanged in mobile communication, where shorter response times contribute to higher senses of immediacy and intimacy, as conjectured by Baym (2010).

Other consequences can also arise from perceptions of delayed responses, such as anxiety or perceptions that there is a problem. When our interaction partners don't respond to text messages, for example, our notion that we are never out of contact with others is violated, and we might think something is wrong (Ling, 2012). A study of response delays in parent-teen text message exchanges determined that delayed responses from teens to their parents resulted in high levels of uncertainty and, among some parents, anxiety (Robbins & Afifi, 2011).

In an organizational setting, Sheldon et al. (2006) tested the interaction of response latencies on evaluations of communication, and delayed responses to incoming e-mail messages were much less influential than non-delayed responses. A similar study by Kalman & Rafaeli (2011) utilized an organizational paradigm to look at the outcomes of e-mail response delays by job candidates, finding that delays in responses caused the job candidates to be seen as less credible, immediate, and less likely to be hired. Although the evaluative consequence of response delays bear differing implications in personal and professional contexts, there is evidence that response delays in either kind of context are more often associated with negative

interpretations.

Beyond interpreting response delays, it's also possible that people will perform other behaviors in the absence of a response. Expectancy violation theory also posits that possible reactions to nonverbal behavior expectancy violations (such as response delays) are *compensation behaviors* (Burgoon & Hale, 1988), which are attempts by the person whose expectancies have been violated to elicit the desired behavior from their communication partner by adapting their own behavior. In face-to-face communication, examples of nonverbal compensation behaviors are stepping away from someone who is not leaving a normative or comfortable amount of distance between two communicators or lowering one's own vocal volume when communicating with someone who is unexpectedly loud. In the case of response time violations in mobile communication, we do not know what compensation behaviors "look like." Compensation behaviors in face-to-face communication involve individuals adjusting their own behavior to elicit changes in the other's behavior: in computer-mediated instances where response time expectancies are violated, is this possible? Can individuals perform compensation behaviors with an unresponsive, not-present communication partner? We may observe different kinds of compensation behaviors in use by individuals who have experienced response delays in mobile communication.

Ultimately, we have empirical evidence that delays in responses to messages can impact the way individuals feel and view others, but we do not have a fuller picture of what response delays mean to individuals in a society driven toward perpetual contact. It is unclear how delayed responses across myriad naturalistic mobile communicative contexts may impact individuals experiencing them and to what depth,

and how it relates to their overall senses of connected presence within mobile interaction.

**Proposed Research**

The main goal of this dissertation is to understand the meaning of response delays in mobile communication within a highly mobile-connected society in which there are pressures and expectations to be available to others via mobile devices. This study seeks to understand them from the perspective of emerging adults, who are among the first to have been exposed to mobile communication technologies from young ages and now are among those who perform the most microcoordination and communication in general via the mobile phone. From past research on mobile communication, we know that generally in American society individuals are expected to be persistently available to others and expect others to be available to them via mobile devices (Ling, 2012). We also know that the experience of delayed responses and unavailability of others is associated with some negative outcomes, such as damaged impressions.

Taken as a whole, I wanted to investigate the greater meaning of response delays and unavailability in mobile communication among the most technologically connected demographic of individuals within the United States. The research was performed from the vantage point of communicators engaging in mobile communication with others and experiencing delayed responses, which involved acquiring a deep understanding of the contexts in which delays are perceived. Focus was placed on understanding the impact of response delays in communication occurring primarily with others' primary communication partners, with whom it was assumed (based on prior research, such as Licoppe (2004)) individuals have high degrees of connectedness &

connected presence via mobile devices. Investigating the role of context in experiences of response delays enabled us to more deeply understand the ways in which individuals evaluate the response time of others and how they react. This required understanding the individual's own mobile phone use and response times, their perceptions of the communication dynamics and history between them and the communicators involved, as well as their perceptions of the other circumstantial factors that may impact when a response is perceived as late or when another individual is seen as unresponsive. Additionally, it entailed understanding how the individuals think and behave in reaction to a lack of a response, both at the instance of a delayed response as well as into the future with their continued communication with the other individual. By getting a full picture of how individuals perceive and react to delayed responses in mobile communication, we began to unpack the role and outcomes of response delays in connected presence and in a society where expectations of availability are constant.

### Research Questions

The research questions examined within are:

1. How do individuals perceive their own attachment to mobile devices, availability to respond to messages, and responsiveness to incoming messages?
    a. How do individuals perceive their own attachment to their mobile devices?
    b. How do individuals perceive their own response time and availability to respond to messages in mobile communication?
2. What are individuals' expectations of others' availability and responsiveness via mobile phones?

    a. What factors drive their expectations of others' availability and responsiveness?

3. How do individuals perceive, experience, and react to response delays in mobile communication?
    a. When do individuals perceive that a response is late or absent?
    b. How do individuals evaluate, feel, and react to response delays?
    c. How does the context of the situation impact how the experience and outcome of a response delay occurs?
4. What are the larger implications of response delays for communicators?
    a. How do individuals perceive that response delays impact their relationships and communication with others?
    b. What meanings do people ascribe to response delays more broadly?
    c. What are the outcomes of experienced response delays on sense of connectedness to others?

# CHAPTER 3: DATA COLLECTION

## Research Approach

In order to answer the research questions at hand, I conducted a qualitative data collection, utilizing semi-structured interviews to explore individuals' mobile communication and experiences with response delays. Utilizing qualitative methods such as interviews enables researchers to study expectations of response time and violated expectations in terms of personal characteristics, situations, environments, relationships, and the processes that connect these. Yet unknown factors will have an opportunity to emerge from qualitative inquiry, and analysis of how some situations and relationships influence others will yield explanations intended to answer the research questions. The relationships between mobile communication response time expectations, perceptions of delays, and reactions to delays (as well as the varying contexts in which these operate) are interconnected and not clearly understood theoretically. A process orientation toward this phenomenon is the first step to developing a full conceptual framework of what concepts are at work; once these are established, future quantitative work could systematically test the role of different factors within a conceptual model.

Another main impetus for utilizing qualitative methods is that qualitative methods are more appropriate for understanding the *meaning* individuals assign to various events, relationships, and experiences, and violated expectations of response time involve understanding individuals' interpretations and sense-making of response time. Meaning can refer to the emotions, cognitions, intentions and beyond that comprise what is considered as the participant's perspective (Maxwell, 2013). Qualitative

methods also enable researchers to understand the context in which participants act and how the context influences their actions. Restricting the inquiry of mobile communication response time to an experimental setting would not enable researchers to understand how unique circumstances shape expectations, perceptions, behaviors and experiences related to response time expectations. Additionally, the fact that mobile communication occurs across *portable* devices throughout the day renders additional difficulties for studying these phenomena in a lab setting. Rather than investigating the amount of *variance* one factor explains in another, this research in part investigates *how* one factor plays a role in affecting another and by what process.

**Recruitment**

The targeted population for interviews was emerging adults, ranging from age 18 to 25 years of age. This age range is comprised of individuals who are anticipated to have predominantly similar practices of the use of mobile devices to communicate but with potentially widely varying contexts in which they use their phones, in accordance with the instability and change that marks emerging adulthood (Arnett, 2000). Within this age group, 100% of adults own a mobile phone (Pew Research Center, 2018a), and this demographic represents some of the earliest adopters of social networking sites (Pew Research Center, 2014b). More diverse use of mobile phones likely relates to how frequently individuals send outgoing messages from their phones (regardless of whether or not it is a text message, email, or other kind of mediated message), potentially impacting expectations of others' response times and reactions to response delays. Types of individuals with whom participants are likely to engage in mobile communication with are friends, romantic partners, and parents.

The practice of sampling this demographic group specifically is referred to as both *purposeful selection* and *purposive sampling,* and it is used in cases in which the researcher can argue that this method will result in participants who can provide information and depth to the research questions and study goals that cannot be as well achieved from other kinds of participants or samples (see Maxwell, 2013). Purposeful selection can both achieve representativeness by selecting individuals who typify emerging adult mobile users in American society as well as portray heterogeneity in this population adequately.

To recruit individuals between ages 18-25 for interviews, I recruited participants both via the MSU SONA paid community pool in Lansing, Michigan and via Craigslist in San Francisco, California. In Michigan, the study was advertised only to individuals who were registered for the SONA system, online community research pool, who were between 18 and 25. At the time of data collection, the SONA system had 354 local 18-25 year-olds registered in the system as research participants. One advantage of acquiring a sample via University resources and community recruitment was the ability to conduct interviews face-to-face; additionally, using this system enabled me to recruit 18-25 year-olds who were not exclusively students. A main disadvantage of this recruitment method was that local individuals may not have been representative of young adults nationwide. This geographic area is predominately suburban and rural and, therefore, there is a possibility that some opinions, experiences, and behaviors of those within this age group with regard to the research topic will not be fully represented in this study. To acquire additional input in a metropolitan area in a different area of the country, I advertised the study on the local San Francisco city craigslist. I advertised the

study to anyone aged 18 to 25 who lived locally and was able to meet face-to-face for the interview. One of the benefits of recruiting research participants in this metropolitan area via Craigslist was that the participants were not students; therefore, the overall research pool was slightly more diverse than had I only conducted it with suburban and rural residents who were predominantly students in Lansing, MI.

Ultimately, the number of conducted interviews was reliant on the point at which saturation was reached, where no new themes were observed in the data. I anticipated the need to conduct 15 to 25 interviews but decided to cease interviews when saturation was achieved. Participants received an invitation to participate for an incentive of $20 for a 50-minute interview in Michigan, $30 for a 60-minute interview in San Francisco, and those who were interested were directed to sign up for an interview session by filling out a short pre-screener questionnaire.

**Sample**

The interview subjects were sixteen residents within a large Midwestern capital area and five residents in a large metropolitan area in the Western United States in the summer and fall of 2014. We reached saturation on main topics, themes, and types of anecdotes discussed by about the twentieth interview and conducted one additional interview after that for a total of 21 interviews. See Table 1 for a basic demographic description of this study's sample.

**Interviews**

The research was carried out using in-depth interviews. The purpose of the interviews with each subject was to gather information about perceptions of mobile phone usage, experience engaging in mobile communication in relationships and

experience of unresponsiveness from mobile communication partners. The primary goal of interviews was to unpack the experience of response delays — understanding how individuals interpreted response time and made meaning of delays, what outcomes response delays had, and how the experience of delays and reactions to them related to individuals' relationships with their communication partners, to their communication context and perceived context of their communication partners, and to their own mobile phone usage.

Table 1: Sample demographics

| Sample demographics |
| --- |
| 21 adults aged 19 to 25 |
| 7 males, 14 females |
| 16 white, 5 non-white |
| All owned personal mobile devices (2 participants owned two mobile devices) |
| 16 Lansing-area residents, 5 San Francisco Bay Area residents |

Interviews were all conducted with the use of interview guides designed with open-ended questions and probes. I tailored the introduction/warm-up questions within each interview guide a bit differently for each participant to build off of their responses within the pre-screener questionnaires. Three pilot interviews were conducted before the main data collection to enable relevant amendments to be made to the interview protocols. Each interview lasted approximately 45 to 60 minutes and was conducted by the primary researcher (myself). I took notes during this interview and added these as memos to the set of data available to analyze. Interviews were audio-recorded and subsequently transcribed for coding using a paid transcription service called Scribie.

I decided on in-depth interviews as our primary method of inquiry as they are particularly instrumental to gaining insight on the human perspective on computer-

mediated communication, mobile phone use, and response delay issues as it allows the conversations to flow in a natural way, conducive to eliciting attitudes, emotions, examples and stories from the participants about their experiences. They were structured such that the interviewer and participant were able to ease into an eventual dialogue about availability and response delays by first asking questions about the participant's technology use, perceived habits and primary communication partners that were relatively easy to answer. This served to encourage the participant to feel comfortable opening up. After these initial questions, the interviews focused more around the concepts and questions of primary interest. A secondary benefit to this approach is that – although most research regarding response delays in CMC has engaged in experimentation and communicator ratings, utilizing interviews enables us to really dig into the *why* – how and why individuals make the assessments they do and how they feel about the impact of these delays in their relationships. This research study can help to synthesize the research on response delays that have been conducted across various disciplines as well as make room for new insight and grounded theory to explain the conceptualization of response delays in mobile communication. In these initial stages of inquiry into this topic, in-depth interviews enabled us to gain unique insight about these processes from individuals who have first-hand experience. (Please see Appendix B for a draft of an example interview protocol.)

## Data Analysis

### Unit of Analysis

The unit of analysis for this study was the individual, with emphasis on their experience as a message *sender*. The phenomenon of study revolved around the mobile

communication performed by the participant, their perceptions about availability and response times in mobile communication, and their experience of response delays and how they affected the communication between themselves and the communication partner, and how it impacted themselves, their perceptions of the other individuals, and their relationships.

### Coding Data for Analysis

Data were analyzed via an iterative coding process, the creation of summary statements for each code, and the compilation of these summary statements into data displays for further summarizing, exploration, and comparison. First, interview transcripts were carefully read to identify prevalent emergent themes and concepts related to the research questions. Over a series of iterations, these concepts and their definitions were honed and used to code the data (see Appendix C for a table of final codes, definitions, and example data).

Coded data was extracted from the transcripts and placed into individual memo files. Within these files, data was sorted by code and then by research question to which the code applied. Summary statements were created to describe the findings about each code/concept under each research question. Ultimately, some codes required further refinement at this stage when some coded data was important to the overarching research question but not pertinent to the specific research question that was the focus of a memo file. In these cases, the definitions of codes and rules were tweaked.

The summary statements developed in the data memos were organized into visual data displays; specifically, I utilized the conceptually-clustered matrix approach (Miles & Huberman, 1994), which compared the conceptually-related codes under each

research question by source of data. Matrices represented the four research questions and included summary statements for each associated code across all data collected. One matrix, for example represented the research question “How do individuals react to response delays?” and the codes included in this matrix all described various reactions to these delays. The codes represented in each display demonstrated utility in answering the research question at hand. Comparing code evidence across the data, for each matrix, I developed an overall analysis and summary of findings associated with the research questions.

To discuss the answers to each research question, we looked for the most high-frequency occurring codes or co-code categories. Each research question analysis and discussion is broken down by these codes and their subcodes with exemplary quotes and a discussion of why they matter, situating findings within the broader existing literature. Most quotes are accompanied by a participant sex and age. I used pseudonyms in place of participants’ actual names to protect their anonymity.

## CHAPTER 4: RESULTS & DISCUSSION

The purpose of this dissertation is to understand the meanings and consequences of perceived delays in responses to messages in mobile communication. In order to understand the role of response delays in mobile communication, we investigated individuals' attitudes about availability and responsiveness in mobile communication, relating these back to their own self-reported attachment to their device, availability to respond and responsiveness to others. We built our understanding of how people make sense of response delays via examining people's perceptions of the availability and responsiveness of their communication partners and how they perceive, experience, and react to response delays. Ultimately, we deduced the meanings that response delays (and responsiveness in general) hold for emerging adults in this study.

### Self-Perceptions of Mobile Phone Use & Responsiveness (RQ1)

One area we wanted to investigate more deeply is how individuals' *own* relationships to their mobile phones and perceived responsiveness to others may impact the way they perceive the *others'* responsiveness. As a result, we spent time trying to understand how individuals conceptualize responsiveness, starting with their own reported media habits and responsiveness. Prior research shows that the degree to which the mobile phone has become socially embedded obligates people to be more synchronous in their communication (Ling, 2012), and its psychological embeddedness is associated with checking phones for messages and alerts without having received any notifications (Pew Research Center, 2014a), sometimes even in an automatized way (Bayer & Campbell, 2012). For this reason, we conjectured that those who display more signs of attachment to their mobile devices (such as frequently checking for

messages) may expect others to behave similarly and, in turn, have higher expectations of others' availability to respond to messages. To investigate this, we asked:

- How do individuals characterize their own attachment to their mobile devices?
- How do they describe their own availability to respond to messages and their responsiveness to messages? How does this relate to the way they characterize their relationships with their mobile phones?

**Relationships to Mobile Devices**

Most participants were able to clearly articulate the ways in which they interact with their phone on a day-to-day basis. A few of the different ways we explored the degree of attachment to mobile devices involved asking people about how they would describe their relationships to their devices as well as how they would describe more concrete interactions with their phones, such as where they store their device, how frequently they check their phones, and what they do (and how they feel) when they do not have their phone for whatever reason. Of note, via this data collection we did not actually systematically measure participants' levels of use; it may be that individuals used mobile devices similarly but described or evaluated the behavior differently, or they may have evaluated their use of their devices similarly but not actually demonstrate the same levels of use across our sample or target population.

We also asked people to compare their own relationships with their mobile phones to those of others; for example, do people perceive themselves to have comparable relationships with their devices to others or do they perceive others as being more or less attached to their own devices? Below, we summarize a few facets of mobile device use participants described that relate to both their own degree of attachment to their

devices as well as their availability to respond to messages.

One way people describe differing levels of attachment is with regard to where they keep their phones throughout the day with respect to themselves. The majority of participants referred to keeping their phone on their person, be it in their pocket or in their hand. For many, it was an extension of themselves, supporting Baron (2008)'s framing of the mobile device as a second skin. One participant remarked, "I have it on me all times. I kinda feel naked without it" (Emily, female, age 22). Others would make sure it was still always within arm's reach: in their purse, on a phone stand on their desk, or - as one participant reported - literally within a "5-foot radius" of her.

Aside from physical proximity to their devices, the regularity (or irregularity) of actually checking the phone also played into the ways people described their relationships to their devices. "Phone checking" in this circumstance at minimum means checking the screen of the device for the presence of notifications, although some reported "waking up" or "unlocking" their devices to interact with different applications on it. Checking the phone screen serves the purpose of seeing whether or not the person has any new updates or messages, usually displayed on a phone screen via push notifications. For some, they do not attend to their phone in the absence of these kinds of push notifications, which are typically accompanied by vibrations or small sound bites generated to get the attention of the device owner.

However, a number of interviewees said they frequently check their phone regardless of whether they have received a notification, which we know is increasingly common behavior (Pew Research Center, 2014a). One participant (male, age 21) shared that his frequency of phone checking is related to whether or not he is expecting

a response: “Sometimes I’m checking it every couple minutes because I’m waiting for something or I know something is coming or [I’m] waiting for an email”. We also learned that some will explicitly check to verify the *absence* of notifications. People described that they look at their screens to verify the absence of notifications specifically when they are expecting responses; as we will unpack later, the absence of notifications is important because it means that neither important information has been missed nor is a potential communication partner in turn waiting for a response from them. The idea of not responding to a message right away implies that one is “keeping someone waiting”, which was generally seen as an undesirable behavior.

Interestingly, we observed that the people, who report phone checking without having received notifications, tend to react emotionally to their own descriptions of their behavior in this way, either chuckling at themselves or expressing embarrassment or shame that they are so attentive to their phones. Mariah shared that she often takes her phone out without having any real reason to, as though it was not even something she fully intended to do.

> Sometimes I'll be at work or something, and it'll be in my pocket, 'cause I listen to my music. And then I'll take it out, but I'm doing something. I didn't mean to take it out. No one's texted me in that period of time…I'm just so used to pulling it out, yeah. (female, age 24)

Checking their phones without first hearing or receiving notifications is something a few participants associate with *excessive* use or attachment to their devices.

We observed nearly all participants describe a strong reliance on their phones. The vocabulary several people used when talking about their phones demonstrated its

relative importance in their lives. A few participants described that they were addicted to their phones, whereas others described what they believe are “healthy” levels of dependence. When discussing instances in which they didn’t have their phones or when the battery died, or the degree to which they check it and attend to its beckoning call. Annie described this kind of occurrence using the following kind of language:

> I feel very attached to my phone. I remember one day, I left my phone at home, when I went to work, and this is when I wasn't working as a news reporter, so I didn't need it as much, but still at first, I was like *[made stressed face with widened eyes]*... 'Cause I think now I would turn back and go get it. I feel like I would not have left it. But... When I did this in the past, I felt so weird at first, and it was kind of hard to not have my phone. (female, age 24)

General attachment to phones was also something people recounted with a sense of shame or self-judgment in some cases. Jessica was one such participant who reported feeling some shame about her degree of mobile attachment:

> The first thing I check is my cell phone when I wake up just to see if anybody messaged me or if my mom called me or something. Sometimes I can sleep through it. And then the last thing I check is, I go on my phone right before I go to bed, which is really bad… (female, age 19)

Across our sample of emerging adults, mobile phones had clearly become a critical tool to coordinate with people throughout the day and provide a host of other utilitarian functions that these individuals have grown to rely on.

When discussing individuals’ relationships to their mobile phones, people were particularly animated when discussing the notion of or past experiences of being without

their devices. Participants were asked to recount times during which they didn't have their phone, either by way of leaving it somewhere or by way of it running out of power to operate. Reactions to this question tended to be emotional. Having a phone battery die or accidentally leaving a phone at home was associated with freaking out or feeling lost, frustrated, naked, and/or like "something is missing". Two participants literally referred to the anxiety they feel when they don't have their mobile device as 'separation anxiety.'

On a whole, this is an event that people try their best to avoid. To avoid this, a few participants reported that they try to keep their phone charged at all times, and one participant carries her charger with her everywhere to avoid dead batteries. Two exceptions to this are participants who self-impose mobile phone breaks for themselves at explicit times during the day to get other things done.

Why were people so concerned about not having their phone at their disposal? Overwhelmingly, the reason was because they wanted to remain available to receive calls and messages from others; others might expect them to be available, and they need to be able to respond. They also may want to be available to others because of existing connection norms that reinforce expectations of perpetual availability (Bayer et al., 2016). For almost every participant who described frustration, anxiety, or other negative feelings related to the absence or lack of a working phone, the negative emotion was really related to their feelings of disconnectedness to others. They are unable to communicate with others, and more importantly, others are unable to communicate with *them*. Not receiving messages from friends, family and others not only means that they might miss opportunities to connect with these people in person

(or have the option to) but also means that they are not *available* to others who may need them, often without explanation.

One participant described her stream of consciousness when her phone dies: “I feel disconnected. I feel like, ‘Oh my gosh, I could be texting this person by now, or I could be checking this email, or what if this is happening and I'm not aware of it?’” (Corinne, female, age 20). She described wanting to stay “in the know” of whatever is going on: “instances like class is cancelled or my professor is telling us to like bring this book or we have a quiz or things like that happen last minute, I think it's important to know about them.” Like in the case with microcoordination, where our plans with others develop in an iterative fashion, we want our phones on us in case of emergencies or for the receipt of information – the content of which we may not be able to anticipate. It appears among this demographic that there is a reasonable assumption that things can change last minute because people can be contacted nearly instantaneously, wherever they may be and whatever they may be doing.

Some experience extreme discomfort without their phones, not only because they are disconnected from those they might want to connect *with* the device but also because they feel some degree of discomfort dealing with their external surroundings. One participant remarked, “I felt so disconnected and I felt like I didn't know what was going on. And I was like, ‘What am I gonna do if I get into a situation where nobody's talking? How am I gonna entertain myself?’” (Tony, male, age 21)

There additionally seemed to be a theme of people drawing conclusions about how attached they personally were to their phones based on habits they witnessed in others. Emerging adults interviewed often shared general ideas of when phone use

either was inappropriate (e.g., on dates) or physically untenable (e.g., in the shower), and although they would often themselves admit that they were very heavy phone users, they would contrast their own mobile attachment with those who used their phones during these other times. For example, one participant explained that he does not use it at the gym and that he's surprised to see others use their phones there. He assumes that their use of it at the gym must mean that they can literally never be without it because he sees the gym as a place where physically it doesn't make sense to have your phone in your hand. "I'm surprised that they never leave the phone even at the gym, or if I go to the gym and I'd see someone that has their phone with them, I'm like, "Are you going to *lift*?"" His seeing this kind of "nonsensical" behavior by others reinforces his belief that he is less attached to his phone than others.

**Self-Perceptions of Availability and Responsiveness.** In addition to asking interviewees to describe the ways in which they interact with their phones, we also asked them to describe the degree to which they are available to respond to incoming messages and how responsive they are to these incoming messages. One question we established prior to conducting the research was whether individuals' own availability to respond to messages and responsiveness affects how they perceive the availability and responsiveness of others to the participants' own outgoing messages. Although when we asked about individuals' relationships and sense of attachment to their devices we heard many similar responses across our participants, the degree of availability and responsiveness that participants reported varied more widely between individuals.

**Availability.** Perceived availability to respond to messages was largely predicated on the context people were in during which they received messages. Most

individuals reported that the only cases in which they were unable to respond right away to incoming messages was when they were away from their phones. The variance between participants, however, emerged when we observed whether they referred to voluntary or involuntary availability to respond.

Involuntary availability was conceived as a situation prohibiting use of their device that was out of their control. This could be accidental or happenstance distances from phones (such as when devices were forgotten at home or out of power) when, naturally, people were prohibited from responding to messages, let alone see or receive them to begin with. Then there were also circumstances during which an individual may not have been permitted to be on their phone because of other external forces (such as rules against mobile device use at work).

Voluntary availability to respond refers to instances in which participants demonstrated agency over whether or not their phone was actually near them or whether they made themselves available to receive incoming messages from senders. For example, a few participants referred to certain activities during which they would not keep their phone with them, such as the participant who would not use his device while working out at the gym and the participant who would power down his phone while studying or completing school assignments. Several participants mentioned that romantic dates were one scenario during which they would not keep their phone near them or be available to respond to messages. Mariah remarked,

> I don't care if [other] people are on their phones, but if I'm out on a date, I don't text. I tell everyone "don't text me", or when I'm at work, and I'm doing something, I'm like "don't text me", and people don't. But if I'm hanging out with my friends

and we're not doing anything, we're all on our phones. We're all with each other and we're still on our phones. (female, age 24)

These kinds of circumstances represent *decisions* to be unavailable to respond as opposed to those in which someone may have wanted to be available to respond but for whatever reason was unable to be because of their device not being functional or proximal for use at the time. Recent research investigating availability management and responsiveness on mobile phones found that the heavy social demands both in co-present and technologically-mediated environments encouraged – and sometimes necessitated – prioritizing social contacts and incoming communication (Ames, 2013). In other words, individuals decide based on the situation whether they will privilege their copresent communication partners or their distant ones. Such is the case with Mariah, who shared that in certain contexts such as on a date, she'll prioritize her copresent communicator (her date) as opposed to distant others.

Additionally within various environmental contexts, interviewees differed in the extent to which they believed they could or could not – or *should* or *should not* – be available to respond to messages according to the social norms of the setting. For example, the majority of our sample was college-aged, and although some students continued to use their phones and be available to respond to messages during class, others said that the classroom was a context in which they considered themselves "busy" or generally would avoid checking their phones as much lest they become distracted. Tricia argued that texting is discrete enough that you can still do it while in contexts where you're supposed to be doing something else:

> Texting is just more convenient [than phone calls], and I might be doing something else. I might be in a meeting or at work, and you can't really have a full-fledged convo on your phone, so texting is more discrete. (female, age 21)

She felt it was okay to continue to multitask in environments similar to others (such as class) where others indicated they wouldn't. It's likely that this discord in perceived social norms of when it is or is not appropriate to be on one's phone could be related to availability expectation friction as well.

**Responsiveness to Incoming Messages**. The emerging adults we interviewed described their responsiveness typically in terms of ranges of time. Generally speaking, we heard several participants describe that their responsiveness to messages varied from right away to several days from the receipt of the incoming message. Those who report having their phone in close proximity report that they usually respond within a minute or so, *unless* there are factors involved – such as barriers to responding presented within their physical environment, social context, phone availability, and so on.

Across all of the interviews, participants demonstrated agency over their own responsiveness to incoming messages. Certainly there are social norms that guide what degree of responsiveness is appropriate in various contexts, but nearly every participant recounted multiple instances in which they made conscious decisions about when they were available to receive messages and when they responded. For example, Maureen described in quick succession how sometimes she chose not to respond while other times she responded right away.

> I am actually considered not a great texter because sometimes I'll read it and if it's not important, I will just think, "Oh, I'll text them back later." Then I'll forget, now I won't text them back. And a couple of days will go by, and I'll see the message, I'm like, "Oh crap! I never responded." But if it's like an important conversation or meaningful conversation, I'll text them back right away. (female, age 20)

Maureen described making decisions about when to respond based on message content. Similarly, Jessica describes her choices to respond or not to respond to messages in environmental contexts she typically wouldn't deem socially appropriate.

> I don't text as much when I'm in class. When I do text, it's like my mom's texting me about something important or when my girlfriend's texting me or something, asking me something, or if she's looking for something, or if she has a question. I always have it there though, in case somebody does text message me and it's important. But other than that, if someone texts me and it's not really important, even if it's my mom or my girlfriend, I'll just leave it there, I don't answer. (female, age 19)

In Jessica's case, her choice is oriented around who the communication partner is. There was one exception to this out of all of the interviewees. Abe claimed that he responds immediately to any friend or family member if he is available, as he doesn't see any point in delaying.

> Abe: If you have nothing to distract you from sending a message or replying to a friend or something, you have to. I believe so.

> Interviewer: You have to? Tell me more about why you think that is…Why you have to respond right away when you receive a message.
>
> Abe: Because somebody is trying to contact you, trying to tell you something, asking you for a favor, maybe asking you a question. So, he is in need of your help or just wanna know something, you have to reply. Why not? … I mean, why do you ignore this message or just delay? (male, age 25)

Abe not only doesn't understand why someone *would* delay, but he also feels it is imperative to respond. He sees texts as reliable signals that someone needs something from him, and it is his responsibility to get back to them.

*Purposeful delays in responding***.** Several participants referred to instances when they would delay responding to a message for any host of reasons. There are many different factors that people use as justification to delay responding and do so later. Our participant Cory described deliberately weighing the pros and cons of delaying responding to a question from a friend about getting together before ultimately settling on not responding:

> I could be better about ways to…say… 'Hey, I need to wait until [I know] this,' and sometimes I just don't because I just think about it like maybe he won't understand; maybe he'll just get mad at me 'cause I don't know". (male, age 21)

Cory explained that there is a trade-off he's making by not responding right away and letting the communication partner know he can't answer yet. The benefit of waiting is that he "buys" himself time to figure out what his plans are, but he knows he will have to apologize later (to a potentially angry friend) because of the delay. Because he doesn't

think his friend would understand why he can't answer about the plans yet, he is – in a way – protecting his friend from not understanding or being hurt.

Participants' responsiveness to incoming messages also depended on the *contexts* people were in during the receipt of incoming messages, as well as *who* their communication partners were, the *content* of the message(s) and the various interactions of these factors – each of which we expand upon below.

Just as context, such as physical environment and/or social company, can impact whether or not someone can be *available* to respond or to receive responses, it can also impact when or whether or not someone actually *does* respond. Context can refer to the environment someone is in – such as class – or to other situational factors such as the company one is in or whether or not there was already an ongoing semi-synchronous interaction happening between the communication partners. For example, several participants mentioned that they wouldn't respond to incoming messages when they were in the company of potential romantic partners or in the middle of other significant or serious face-to-face interactions.

Participants seemed to have established mental models for when it was or was not acceptable to respond to text messages in the physical presence of others. For situations that felt more casual and less "high stakes" than dates or serious conversations, responding to text messages right away was generally an acceptable activity. "If we were just hanging out not doing something like, I don't know, I probably would [respond]" (Maureen, female, age 20).

Although the aforementioned examples are instances during which some situational factors can decrease responsiveness to incoming messages, in some cases,

situational context can increase people's responsiveness. For example, one participant remarked how his participation in a new romantic relationship has impacted the degree to which he keeps his phone with him and charged, enabling him to be more responsive than he otherwise would be or has been in the past.

Another factor that impacts how quickly our participants respond to messages is the actual content of the messages themselves. Even when individuals are available to respond, they often base their own decisions of when to respond on what the incoming message said. Several themes around effects of message content emerged, from whether or not the message seemed conversational vs. utilitarian to message urgency to whether they perceive that responding will lead to a long back-and-forth that they don't want to spend time participating in.

Often the factor that impacted whether or not interviewees reported responding to messages right away was whether or not participants perceived the messages as utilitarian (i.e., task-oriented) or conversational (e.g., purely socially or affect-oriented); utilitarian messages emerged as task-oriented messages that required a response to enable a subsequent action. In many cases, messages that were perceived as merely striving to make conversation were less likely to be perceived as meriting fast responses. One example of message content that was generally associated with participants reporting high responsiveness was questions from people wherein they were asking for information they needed.

Participants seemed to feel content (and sometimes obliged) to respond right away to help their communication partners if they knew the information someone needed. However, there were also instances in which people were asked questions that

they weren't sure how to respond to. In some cases, participants would delay responding to incoming questions if the question was long and involved or if they were being asked about their ability to participate in a future activity. A few participants mentioned gauging the perceived effort required to respond before deciding whether or not to respond immediately. One participant Annie described her thought process:

> If someone's texting me, "Oh, is this assignment due tomorrow?" And if I can just answer a quick "No," and that's it, I'll answer that one versus if my mom's like "Oh, I know you're coming home next weekend, what can I make you for dinner?" or "I'm planning some party," or whatever, I won't answer that 'cause I'll think in my head, "Well, I have this to do, this work to do so I'm gonna do this work. And I'll probably talk to my mom in a couple days on the phone anyways, so I'll answer her question then. (female, age 24)

Delaying responses to texts involving invitations was typically associated with not desiring to commit to specific future plans prematurely; Cory relayed tentativeness toward committing because of a frequently-changing schedule.

> It's like my friend from home texted me, "Hey, I wanna come visit next Friday. When are you available?" and sometimes my schedule changes pretty quickly, just the nature of the college student, and so sometimes I'll wait until a couple days later when I know what my schedule's going to be and say, "Hey, sorry I didn't get back to you. I'm available at 'this' time." (male, age 21)

This aligns with what is known about microcoordination (allowing plans to evolve over time; Ling, 2012) as well as a perceived uptick socially in the degree of "flakiness" or commitment observed in (and reported by) many young mobile phone users today

(Neyfakh, 2010; Tell, 2012). According to these studies, people are increasingly likely to set up several potential plans to occur the same evenings and then rule out the things they don't want to do by process of elimination, prioritizing whatever seems most interesting or useful to them. In the case of some of our participants, a few people would be reluctant to even tentatively commit to begin with. Tony remarked:

> [It will take me longer to respond] if somebody asked me if I wanna go do something, and I'm not sure if I really wanna go do that, or if I know I can do this other thing, later on. Or I know I have to do this thing later on, but I wanna still do that thing and see if I can work out a way to do 'em both. It's kind of, "Well, what are you doing later, would you wanna do this?" It's like I have to think about that for a second, but I'm kind of like "Give me a sec, I need to do what I'm doing now, finish this, and then I can answer your text." (male, age 21)

Cory said this was the only condition in which he felt as though he purposefully ignored incoming texts and delayed his replies, and he perceives that this is common among people he communicates with. "…If I just don't know the answer or I just don't know how to respond to them, I'll hold off. I think we all do that, but I know specifically I've done it a lot".

Other cases in which young adults also indicated a lack of compulsion to respond right away were when texts were received that felt more conversational than utility-driven. Several participants relayed that they feel very little impetus to respond to messages that don't seem to have a clear reason to respond. Tom outlined that he is often wont to ignore texts that don't include questions.

> If it's not a question, if someone just says, 'Hey.' Alright, what do you want me to say here? 'Hey' back? 'Hey!' I'll out the phone down, and I'll wait for them to send another that has a question… or a text message that had a question in it. So yeah, without a question…I'll wait and then definitely someone will respond, 'Hey, why didn't you say anything?' I was like 'You didn't ask me a question.' I do that a lot actually. (male, age 25)

Outside of the case of questions, there are other instances in which perceived urgency impacts responsiveness; in other words, the content of a message makes it clear that someone needs a response immediately. Across our cohort of participants, several common cases of situations expressed in messages that were considered urgent included if someone wasn't feeling well (physically or emotionally), if someone needs help or information right away.

There were, however, some participants who would choose not to respond or engage in text message exchanges with their communication partners when there was some kind of emotional conflict. In some cases, people delay in these circumstances because they don't know what to say, and in other cases, because they need more time to think about *how* to respond, or because they'd prefer handling emotional conversations face-to-face. This latter motivation is consistent with findings by Scissors and Gergle (2013), where they found specifically within romantic couples, that many communication partners preferred to abate text message exchanges in favor of discussing conflict face-to-face.

Communication partners also impacted responsiveness choices, based on prior communication experience with them and decisions about whether they wanted to

engaged based on what they perceived the interaction would be like. Several participants, for example, referenced that their responsiveness varied depending on whether or not they knew that their communication partner would try to *draw out* message exchanges. As previously mentioned, people seem to make decisions about whether or not to respond based on whether or not they feel it is necessary and whether or not they have the adequate information *to* respond, and in some cases, they need look no farther than the communication partner themselves to surmise whether or not they feel it's important to respond quickly. One participant referred to a friend who seems to monopolize her attention on her mobile device.

> She texts a lot. Sometimes…I have to ignore her sometimes. She's one of the people that texts me so much that if I have tasks to do, I have to say, like, 'No, I'm just not gonna answer', 'cause this could keep going for a long time". (Annie, female, age 24)

She has enough prior communication experience with this particular communication partner to know that responding to this person is not necessarily going to result in a rewarding interaction. Another way we observed responsiveness impacted by participants' feelings toward communication partners was in instances where participants were disinterested in the communication partner and did not want to encourage their continued interest by responding. One female participant Tricia reported that she doesn't respond quickly to men because she doesn't want to send them the wrong signal that she's interested in hanging out with them. She compared her responsiveness to these men with her responsiveness to closer friends:

> I have a lot of male friends or people that I have just met that are males, so sometimes I just feel, I don't really want to talk to this guy today because he probably just wants to hang out and I don't want to hang out with him. So unless we're really close friends, that's how you'll get a response quicker from me. (female, age 21)

Gray and Ellison (2013) found that response time is frequently used as a tool for self-presentation in mobile communication. In this case, she's responding less quickly to convey disinterest, but she admits that her audience doesn't perceive this, and she ends up having to verbally explain this.

> Because guys don't get hints, so usually I would have to say in a nice way… just basically tryin' to say, "I will always respond to your texts, but you might wanna take down the frequency a little bit." I'll figure out a nice way to say it. (Tricia, female, age 21)

It is not altogether unsurprising that a lack of interest in a communication partner could predict response delays or absences, as similar features of mediated messaging – such as frequency and duration of messaging – are positively affiliated with socioemotional communication (Liu et al., 2002).

Another possible explanation that could explain why participants delay responding to certain communication partners is because they do not have high expectations of future in-person interaction. Anticipated future interaction has been related in prior online communication research to information-seeking strategies and self-disclosure between dyads (Walther, 1994) with long-term anticipated interaction predicting affiliative behaviors and more self-disclosure and short-term anticipated

interaction being associated with more impersonal communication behavior. Later research has extended this finding to the realm of online dating, wherein those chatting with potential dating partners where they were interested in long-term partnerships were more likely to engage in affiliative behavior (e.g., self-disclosure) than those interested in short-term or casual connections (Gibbs, Ellison, & Heino, 2006). When asked about certain kinds of communication partners to whom participants were more or less likely to respond, a few participants volunteered that they are often less responsive to those who live far away. Jessica (female, age 19) reflected on her communication with a few of her friends:

> Interviewer: So what's an example of a person you wouldn't want to respond to right away?
>
> Jessica: Like an old friend from Florida or Texas. Sometimes my friends from here.
>
> Interviewer: Is there any particular reason why those people? [Why] you desire less to respond to them?
>
> Jessica: I don't know. I guess because I don't see them more often. I do see them pretty often, but not as often as I use to. And so, it doesn't really draw my attention that much.

Although there could be other factors related to reduced responsiveness with old friends, the participant did mention that they don't see their old friends as often as other friends. Their lack of collocation logically relates to the reduced frequency of interaction and anticipation of future interaction, the latter of which the participant associates with reduced attention toward communicating with them. Prioritizing certain communication

partners over others also relates back to the concept of technosocial pecking order, where individuals often respond to messages based on social hierarches and accountabilities (Ames, 2013).

Sometimes participants could tell whether or not messages merited fast responses based on who the message was coming from. For example, one participant Emily mentioned that she could "always tell" when her roommate was bored based on her messages and that this person was just looking for a kind of message exchange. She didn't see this as a necessary circumstance for responding.

> Well, one of my roommates, she'll send me pictures of animals [laughs], so that's how I know she's bored. And so, sometimes I won't respond to those for a little while. But if she needs something, she'll… I don't know, I kinda know the difference now when she's bored or when she needs something, so that kind of determines when I respond. (female, age 22)

This participant was reacting to both the message sender (her roommate) and the content (animal pictures) – a combination that she's learned to recognize and that does not compel her to respond. Participants who reported delaying responses (or not responding at all) to messages in these kinds of circumstances believed that this was fairly typical and acceptable behavior.

Another factor related to both communication partner and message content that we observed impacting self-reported responsiveness to messages was the degree of tension or interpersonal unrest between themselves and the communication partner, which ultimately related to the content of their messages. One participant described that she always chooses her degree of responsiveness based on who messaged her, but

later she changed her perspective on this, describing that there have also been instances in which she sometimes purposefully delays when she doesn't want to respond because of a conflict related to the communication partner.

> If it's someone that I have been dreading to text, it could go on days…It could still be a friend, but it's just either a conversation that I'm trying to avoid or if someone is asking me for advice, and I do not know what to say… Sometimes people come to you and you are like, "I don't know what to say, and I do not want to be involved"…And it's like…well, I'm just not gonna text. (Corinne, female, age 20)

The content of a message can also interact with the context a person is in. For example, a few participants mentioned that there were certain situations in which they would not respond to incoming messages *unless* the messages were important. In these cases, message content can take precedence over their typical behavior. "If we were having an important conversation, I wouldn't [respond]. I might glance at the screen, and see what it says – if it's important to reply. But if it's not, just something that isn't important, I'll wait 'til later" (Maureen, female, age 24). However, there are also cases in which the message content can be perceived as so *unimportant* to the message recipient that they might decide not to respond even if they are in the presence of others with whom it is acceptable to respond to others texts. The same participant remarked, "If it was just like 'wasting time texting', I probably would wait to reply".

Lastly, we also observed people reflect that they often mirrored the level of responsiveness of their communication partners. From prior research on nonverbal communication, mirroring the nonverbal cues of communication partners can either be

purposefully or non-consciously performed and is known as a form of *communication accommodation* (Giles & Smith, 1979). Our participant Alice reported purposefully accommodating the responsiveness of the other person by slowing down their rate of responses, having noted that the other person was not in the practice of responding to messages as quickly as they were. She also described that she accommodated his pace not only because she was wary of her rapid texting being a nuisance to him.

> If [my boyfriend] doesn't respond right away, I don't reply to him right away… he's not a very good texter. He doesn't really like texting. And so I know that if I just keep texting, I'm going to start bugging him… He has a kind of busy life. So I'm like, 'Oh, I'm not gonna text him right away. I'll just let him…' Plus, it's a lot more casual if…I feel it's a lot more casual if you text each other a couple times an hour rather than back and forth, back and forth. If we're gonna do that, I'd rather just have a conversation. (female, age 19)

Here the participant clearly states that she will copy the lack of responsiveness exhibited by her boyfriend if he delays responding. She describes this as a considerate behavior performed to avoid pestering him; she infers that she should match the rate of communication that he establishes via his own somewhat delayed replies.

**Summary.** On a whole, it is apparent that there are diverse approaches to thinking about responsiveness and what degree of responsiveness is appropriate in various circumstances while we still see themes in self-reported mobile device attachment and responsiveness emerge. Most of our interviewees perceive themselves as very attached to their devices, typically having them within arm's reach and feeling uncomfortable when their phones are not available. Despite this cohort's high reported

attachment to their devices, most participants considered themselves to be “average” when comparing themselves to other mobile phone users; they can think of individual cases where people are more or less attached to their devices than they are, which reinforces their belief that they are not overly attached despite feeling very reliant on these electronics.

When it comes to responding to messages, people generally report that they respond very quickly to messages. However, upon further probing, it emerges that responsiveness is quite conditional. Most obviously it’s reliant on whether one has their device readily available, but there is also a great extent of nuance that impacts how quickly one actually responds. Situational context, communication partners, and message content all operate independently as well as together to influence how quickly people respond to incoming messages. Participants seemed to have clear mental models of the proverbial rules or conditions that impact how quickly they respond as well as established “technosocial pecking orders” (Ames, 2013) that impact whether they prioritize copresent or distant communicators and who they prioritize within those categories across different contexts.

Across this sample, there was a demonstrated sense of agency when it came to their own response time – availability to respond did not necessarily indicate that they *would* respond. One reason we heard for not responding upon receipt of a message was to *appear* unavailable. An example of this witnessed earlier was the lack of responsiveness in an instance when a participant wanted more time to consider his plans before responding. It was seen as preferable to try to appear as though he was unable to respond as opposed to potentially responding before he was ready to commit.

The behavior of avoiding being truthful (about being available) in favor of doing something polite (protecting the communication partner's feelings from outright rejection) aligns with what previous research has termed "butler lies"; the concept of butler lie was developed and defined by Hancock et al. (2009) as "using deception to manage social interaction and awareness by avoiding a new conversation, smoothly exiting an ongoing conversation, or explaining other communication behavior" (p. 517).

Individuals we spoke with did not necessarily see their delayed responses as a negative or bad thing. Corinne was one such participant who didn't have concerns with letting someone know she was busy even when she wasn't: "I think everyone has their priorities. You're never too busy to text back, but sometimes you say you are" (female, age 20). For this reason, Corinne remarked that when other friends tell *her* they were too busy to text her back, she knows they are just making an excuse for not feeling like it. Again, this isn't necessarily a bad, thing, and as is posited in this notion of butler lies, the small deception is typically done in an effort to be polite (Hancock et al., 2009).

Prior work established that people often want to preserve ambiguity in their availability status so that they are not presumed available and, thus, compelled to respond (Boehner & Hancock, 2006). Nardi, Whittaker, and Bradner (2000) argued that deliberately ignoring an instant message, for example, could be done without repercussions because the message sender does not know the availability of the sender; he or she may not be there, and this lack of knowledge about the other's presence enables the message recipients a certain amount of *plausible deniability* so that they may respond at a time convenient to them.

Although not responding to a text message does not necessarily mean that someone is unavailable to respond, they may for some amount of time be able to claim plausible deniability about the receipt of the message. In the case of this participant and others who knowingly delay or avoid responding for the sake of not responding with a potentially more socially damaging truth, silence may be in and of itself the deceptive behavior, leading others to believe they are not receiving messages, for example.

It was not noted by any participants directly themselves, yet it was clear that there is some degree of tension in what people reported about needing to respond and norms of appropriateness; for example, we heard several people discuss that they would never text message or be on their phones in certain contexts (such as when they are on dates with others) even though these same people would express that they felt it was polite to respond to messages right away and would rarely delay responding to messages. Based on these conversations alone, it is not clear which social norms (e.g., not texting on a date vs. responding right way) and technosocial pecking orders take precedence in the actual real-time events in these participants' lives; additional research will also be required to determine if certain technosocial pecking orders emerge as dominant in today's American society at large.

**Expectations of Others' Availability & Responsiveness (RQ2)**

Critical to understanding the interpretations of and reactions to response delays in mobile communication are the expectations people hold of their communication partners' responsiveness. The expectancy violation model (Burgoon and Hale, 1988) posits that behavioral expectancies are a function of known idiosyncrasies of their

communication partners as well as social norms. In the absence of prior communication experience (i.e., in communication with new or unknown individuals), expectancies are "identical to the social norms and standards for the particular type of communicator, relationship, and situation" (p. 60). Communication behavior falling outside of expectations past a certain threshold cause arousal and compel communicators to evaluate the violation and its implications.

In the domain of responsiveness in mobile communication and text messaging specifically, it appeared as though accurate expectancies of responsiveness could be less straightforward as a result of the semi-synchronous nature of the medium. Not only are environmental contexts of the communicators not shared (similar to other computer-mediated communication), but semi-synchronous communication is unique from other synchronous and asynchronous communication media in its use for real-time *and* asynchronous communication (Glaser & Tucker, 2004). Since the establishment of mobile text messaging as a semi-synchronous medium, there is also evidence of increasing expectations of others' availability by mobile phones (Ling, 2012; Ling & Lai, 2016; Pew Research Center, 2018a); thus, it was unclear whether the expectations of responsiveness via text messaging were actually more aligned with synchronous communication media. Therefore, this work sought to investigate expectancies of responsiveness within the context of text-based mobile communication with emerging adults and their primary communication partners.

Through the investigation of expectancies of availability to respond and response time, this work digs into the applicability of the known framework of expectancy and their antecedents and looks for potential holes or complications in its application to

mobile communication. To investigate participants' expectations of response times with this semi-synchronous mode of communication, this study asked:

- What are individuals' expectations of others' availability and responsiveness via mobile phones?
    - What factors drive their expectations of others' availability and responsiveness?

The data show that generally expectations of others' responsiveness are consistent with how people perceive their own availability and responsiveness: they perceive people to generally be available with phones in reach and to respond in a timely manner. However, expectations are also dynamic and can vary based on the same factors that impact their own responsiveness, such as context and the person with whom they're communicating.

Unsurprisingly, the most important factor that impacts individuals' expectations of responsiveness include their expectations about communication partners' availability (via explicit or implicit availability cues). One of the reasons expectations of perpetual contact or availability of mobile communication partners exists is because the mobile phone "extends the number of places and spaces where an individual can engage in social interaction" (p. 2, Ling, 2016). Reciprocal availability is in essence a mutual obligation (Ling, 2016), and interviews with our subjects demonstrated some degree of underlying expectation of availability as well as a more specific expectation that becomes apparent throughout the course of daily events and situations.

Communication experience appears to drive both availability and responsiveness expectations. Communication context also impacts availability expectations, insofar as

the *lack of a shared environmental context* makes it nearly impossible to know for certain whether or not someone is truly available, despite expectations they may have based on prior communication experience, explicit or implicit availability cues, and beyond.

**Availability Cues and Inferring Availability.** Although one can be available to respond and choose not to, conversely, a person cannot be responsive without being available; in other words, responding to messages by definition is impossible to do without being *available* to respond. However, through the examination of communication with and episodes of response delays involving primary mobile phone communicators, this research showed that availability of the other person is hard to confidently presume with a lack of shared physical context inherent to most mobile communication.

Yet it is the expectation of availability to see and respond to messages that appeared to most heavily influence response time expectancies and influence the interpretation of noticeably delayed responses and reactions to them. We observed a few primary ways people inferred the availability of others, namely from explicit availability cues, implicit ones, and from prior communication experience with the message senders.

Explicit availability cues, such as read receipts – indicators available within some messaging platforms that indicate the time a message was received and/or opened –, pose interesting dilemmas in some situations where a someone is waiting for a response to their message. These cues take away the ambiguity about whether someone is available (e.g., has their phone on them, can access their message) and in

turn make the message senders aware that someone may be opting not to respond despite their availability. Research by Wohn and Birnholtz (2015) found that people have mixed reactions to explicit awareness features such as read receipts that let them gauge others' availability. Being able to see that someone has read their message or is online can make the experience of waiting for a response worse, as people have higher expectations that the other person can engage with them.

We already have established that people can choose how responsive they want to be, but when someone's actual availability status is unknown, the message recipient may be given the benefit of the doubt for a late response. However, read receipts and other similar status indicators lift the veil and remove doubt to their availability in many cases. (We can't surmise that this is the truth in all cases of read-receipts; there may be instances in which read receipts may just signal that the message has been read but not that the recipient is able to respond.)

A few participants mentioned they like seeing others' read receipts but avoid using them for themselves[2]; these participants admitted that it would be more socially acceptable if they, too, used them[3]. Cory spoke about not having read receipts in a somewhat self-deprecating manner:

> I'm a jerk, because I don't have read receipts on my iPhone, and I know other people do. And I probably should, but sometimes there's too [many instances]

[2] iMessage on iPhone products gives phone users the choice between sending and not sending read receipts to their communication partners.
[3] Some platforms such as Facebook Messenger, Snapchat, and Whatsapp now send read receipts for all read messages, whether or not the message recipient wants those transmitted.

where you read [the message], and I don't know the information [they want], and so I'd like... I don't want them to know that I read it. (male, age 21)

One participant Emily also reported that she doesn't use them because she feels that using them increases the pressure to respond more quickly, and not using them allows her to respond later than she would otherwise. Emily remarked:

I don't have [read receipts] because sometimes I'll read [the message] and I don't wanna respond, but then I know other people have [read receipts] because they think it's being polite, and they know when…Other people know when they have read it, and so then they do respond faster. I don't have 'em 'cause just in case I don't respond right away. (age 22, female)

Read receipts and other availability cues appear to increase the pressure people feel to respond as well as to exacerbate the potential consequences of not responding. Indeed, when confrontations do occur in reaction to response delays, read receipts and their kin can be leveraged as evidence of purposeful non-response by the original message senders in the confrontations.

In some cases, communication partners indicate their availability explicitly, such as by sharing what activities they are up to in their own environmental contexts, which we witnessed individuals recount as a behavior likely to indicate unavailability to respond. Tom mentioned that one of his communication partners frequently indicates when she's going to be doing an activity, such as going to the gym, and that because she states what she's doing he can infer that she's not going to be available during that time.

> I don't think she takes her phone to the gym with her as much as I do…Just 'cause her text message, too, this morning was [that] after work she's going to the gym, then she'll talk to me after that. (male, age 25)

Outside of the courtesy that this communication partner is extending to the participant to preemptively explain any unavailability and corresponding response delays, it also implies that her "default" status is available unless stated otherwise.

Read receipts and status indicators are explicit affordances of some technological platforms that enable people to know the availability of others, but there are other behaviors that also signal availability less overtly. One behavior that signals availability is, simply, the transmission of a message. To send a message demonstrates that a person is on their phone, and there were several examples throughout the interviews when participants assumed that if they responded quickly to these incoming messages that the other person would still be available to respond to their own message. Several participants also referred to "conversations" carried out by text message, where messages were exchanged at a rate more similar to a real-time conversation than a longer asynchronous interaction. Perpetual contact is afforded by mobile messaging platforms (Ling & Lai, 2016), and when participants are engaging in real-time conversations via text messages, their expectations for responsiveness are reinforced, if not heightened.

> So, like I know or really care for how long they'd text me back 'cause I usually ask them something I need to know […]Or if we're just talking. Usually if like we're having a conversation through texting I kind of know they're gonna text me back within a certain amount of time. (Tony, male, age 21)

Glaser and Tucker (2004) called out that rapidly exchanging messages on mobile phones could render text messaging at times *semi-synchronous*, and synchronous messaging is perceived to be more personal, immediate, and connection-fostering. Disengaging from text message conversations via ceasing responsive behavior is likely to be considered an expectation violation.

Another way people can infer that someone is available to respond is learning that the communication partner is texting *other* people. A couple participants recalled instances when they were waiting for responses from someone who was texting other people in their presence.

Because these interviews also focused predominantly on individuals' primary communication partners, it was also commonplace for the interviewees to have some pre-existing awareness of their communication partners' schedules; knowledge of when other individuals might be engaged in other activities enabled them to infer availability and adjust expectations of responsiveness. Mariah described that she could tell when certain people are not responding to her even when they are available because she knows what they're doing.

> I [can tell people are being slow to respond to me] based off of where they are. The five to ten people that I talk to, I basically know their schedule, so my friend who… She's a basketball coach, I know, in the morning. She may respond back quicker when she first gets there, but then there'll be like this whole span of time where she just doesn't answer. I assume she's at a practice or something. (female, age 21)

Awareness of others' engagement in activities that render them unavailable may enable people to adjust their expectations of responsiveness.

**Prior Communication Experience.** Prior communication experience is one of the predicted antecedents to communication expectations as described by EVT (Burgoon & Hale, 1988). In the cell phone communication described by participants in this study, individuals were quite aware of their communication partners' cell phone message responsiveness and could readily characterize the patterns of communication they experienced with specific people.

In many cases, the information individuals harbor about their communication with others reflects beliefs of how responsive others were expected to be. When one participant was asked how she knew how quickly people would respond to her, she replied, "I've learned their habits" (Mariah, female, age 24). Such was the case with the majority of the respondents. When initially beginning to speak with several of the interview participants about their main communication partners and instances of unresponsiveness, it could be difficult for them to think of precise examples. However, many participants could quickly identify at least one person who they recalled had delayed responding on more than one occasion, thus rendering them "bad at responding" and people you should not rely on hearing back from in a timely manner.

People seem to compartmentalize people they communicate with on mobile phones as being either "good at" or "bad at" responding. Given the focus of our study, this data collection elicited more descriptions of the "bad responders." Kizzie was quick to call out one of her main communication partners as being bad at responding: "But Lee – Lee is the worst! He's so bad at [responding]" (age 25, female). She described

that he responds to certain texts but not others and could think of multiple examples of instances when he hadn't responded adequately quickly enough.

Several participants described their parents at being bad at responding, but in their cases, participants tended to attribute their lack of responsiveness to a lack of self-efficacy with their phones. One participant Cory described that his mother was not good at responding to him quickly because she was not "good with her phone."

> Last week I tried to call her, and she was out running errands, and so she doesn't usually…She's not good with her phone, and so she didn't know I was calling her, 'cause her phone was on silent and so I called home. And it's like, 'No, she's gone and running errands.' I said, 'Well, can you have her call me when she comes back?' And I didn't get a call back and so I'm calling again. It's just people…And I'm sure they just forget to let her know, but it's generally just because she's not very good at checking her phone… (male, age 21)

In this participant's case, it's not necessarily that his mother doesn't know how to use her phone but that she is bad at using it to the participant's liking; she is likely deemed "not good with her phone" because the participant doesn't believe she is adequately accessible to him by mobile phone. When sharing stories about both good and bad responders, participants adjusted their expectations for people who were good or bad responders, meaning they were less likely to experience expectation violations for people who they knew to be bad at responding.

**Additional Factors Impacting Responsiveness Expectations.** Although not as prevalent across this cohort, there were a number of other factors impacting response time expectations that emerged throughout the interviews. One such factor

was communication accommodation; we know from prior literature on interpersonal communication that people often mirror each other's' nonverbal communication patterns, and Alice (female, age 21) admitted that she delayed responding to try to respond as infrequently as her boyfriend. Only one other participant (Tricia, a 21-year old female), however, referred to this expectation of response time reciprocity when talking about her expectations of others' responsiveness.

> I'll kind of not [be available to respond to others when they need to hear from me], so you would think people would reciprocate … like, 'Okay, well, she never texts me back within a certain timeframe, so I'm gonna do the same,' but they usually respond pretty quickly.

Interestingly, in this case, the participant speaks about reciprocity not with the mere motivation to try to accommodate their communication style but more so as a "tit-for-tat" or retaliatory kind of behavior.

Another factor that can impact individuals' expectations of responsiveness is their own responsiveness in similar situations. Tony (male, age 21) engaged in comparisons between his communication partners' behavior and his own when it comes to being available and responsive by text message:

> Tony: Like, last night, well, yesterday, I text him about a few things and I kinda wanted an answer relatively soon. It took longer than I wanted. But there were kinda some things I wanted answers to that I should have just called him, but I was like packing up my apartment and … wanted to keep packing kind of thing.
>
> Interviewer: What were you thinking when he wasn't responding? What went through your head?"

> Tony: “What is he doing?” That’s the biggest thing. What is he doing that it takes him a few hours to text me back? And then when he does text me back, I text him back and then it takes him well, takes him less amount of time but … still longer to text me back. And I understand. He’s a pastor so he makes a lot of phone calls, a lot of visits, he does a lot of [house] calls… As far as texting him, he might not see my text if he is with people, or he might be just needing to get some other stuff done… But it does happen like during the weekdays…Like I, even when I’m doing something, usually it takes me no more than an hour to text back. (male, age 21)

For Tony, it appears that there is no such thing as too busy to text back within a shorter time frame (an hour), basing his expectations of his dad’s response time on his own behavior. Another participant also indicated that because *she* sends preemptory messages to her boyfriend to caveat future unresponsiveness, she expects the same courtesy from her boyfriend. Annie showed how her expectations of her boyfriends’ responsiveness in social situations are compared to her own behavior:

> Annie: I’ve definitely confronted him and told him like, “I don’t understand why you don’t even text me all that throughout the night.” Where I will take my phone out and sometimes and be like, “Oh, I’m here with my friends.” (female, age 25)

Individuals may be introducing an added layer of bias into interpretation of someone’s responsiveness if their expectations are that their communication partner will behave the same way they do in similar contexts. In both of the examples described above there was an evident assessment that the participants regarded their own approach in similar situations as “right” or appropriate, whereas the others’ behavior was not ideal or

as acceptable in some way. Communication accommodation and self-comparisons are just a few of many other methods participants used to inform their expectations and assess others' responsiveness against those expectations.

Another important factor that impacted responsiveness expectations was the communication context and perceived urgency of their situation. A couple participants shared instances in which they appeared to more closely attend to the lack of availability and responsiveness of their communication partners because their need for a response was more dire. Such was the case with our participant Kizzie (female, age 25), who became frustrated in an instance of trying to reach her partner while she was in the store, or in the case of Tricia (female, age 21) who had a time-sensitive window during which she needed to reach her mom in order to win a contest. Prior research has shown that the demand for availability is felt even more strongly in the case of small and large scale-crisis instances (Ling, 2016).

**Summary.** Throughout the interviews, we heard nearly all participants share general expectations of fast responsiveness via this semi-synchronous medium, with expectations of responses usually being within a few minutes of sending their messages. The response time expectations appeared to be significantly moderated, however, by perceptions of the communication partners' availability as well as previous communication experience with them that might indicate they would be anything other than normatively responsive.

EVT posited that expectancy is driven by prior communication experience, social norms, & communication context (Burgoon & Hale, 1988). The physical communication context of the communicators is not called out as a separate factor that could impact

expectancies, as it is shared in face-to-face communication. In most mobile communication, where communicators are not co-located, message senders' inference about others' physical context appears to be an important antecedent of expectations of their communication partners' availability to respond and ultimate responsiveness. As we see in the subsequent section, an incorrect assumption or awareness of the others' physical context or availability to respond can mean a message sender has unrealistic responsiveness expectations of their communication partners and may be more likely to experience expectancy violations.

Availability of communication partners to respond to messages was either inferred via implicit or explicit cues or presumed based on a high degree of proximity to the communication partner with (sometimes privileged) awareness of another's barriers to being available to respond. Instances in which read receipts indicated another person is available but not responding are typically more frustrating to communicators (Wohn & Birnholtz, 2015), but even these are imperfect cues of someone's true availability to respond. This research showed that even when participants believed they knew another's availability status based on that person's assumed physical context or based on online awareness indicators that the lack of shared environmental context introduced room for error.

**Interpreting & Reacting to Response Delays (RQ3)**

This research also sought to investigate how emerging adults interpret and react to response delays. Although we already know quite a bit about the impact of nonverbal expectancies on expectancy violations due to expectancy violations theory (Burgoon &

Hale, 1988), we did not have a way of knowing how violations would be interpreted and reacted to in an asynchronous, non-co-present communication paradigm. In a society where fast responses are increasingly the norm and availability of others is an expectation - but in which there is also no absolute guarantee that someone is persistently there - how do individuals handle situations in which they perceive a message is delayed past expectation? More formally, we proposed the following questions:

- How do individuals perceive, experience, and react to response delays in mobile communication?
- How do interpretations of and reactions to response delays relate to the other contextual factors of their mobile interaction?

Nearly every participant could recall a specific instance when the response time of a communication partner violated their expectations. Even outside of the specific experiences discussed in detail, participants referenced response delays occurring in general ways that demonstrate they are attentive to these kinds of expectancy violations and able – for the most part – to describe how they perceive response delays affect their behavior and make them feel. (Of course, there may also be unperceived consequences of response delays or consequences experienced on the part of the communication partner that are not captured in these first-person retrospectives.) The effects of response delays ranged from changes in mobile phone behavior (e.g., increased phone checking) to emotional reactions to confrontations and beyond. There are also impacts of recurring response delays between the same pairs of

communication partners, but these will be discussed in greater detail when we discuss the implications of response delays on feelings of connectedness.

**Interpretation of Delays.** According to expectancy violation theory (EVT), communication behaviors that violate expectancies to a noticeable degree draw the communicator whose expectations were violated to sense-make about the violation (Burgoon & Hale, 1988). Typically, a lack of response is interpreted as representing something negative. If people can't think of a reasonable explanation for why someone hasn't responded, they assume the lack of response must *mean* something. This void could become a symbol of indifference, of anger, of avoidance, of disinterest or disliking to the original message sender. The time of response is no longer just a characteristic of mobile communication; the *absence* of a response within an expected time frame *becomes* the communication vessel. Mariah described how she thinks of silence from male communication partners:

> I just feel like... I don't know. It's like a girl thing. I'm one of those girls where it's like, "Oh, if he doesn't text, that means he doesn't like me. He's not interested. We made plans. He's canceling. What's going on?" I tend to overdo it, I know that I do, but I can't really help it. (female, 24)

This is a clear depiction of what communication scholars such as Hall (1959) and Watzlawick et al. (1967) argued over half a century ago – about time communicating the truth where words lie and that we are always sending messages of some nature (even if not through words) respectively.

Throughout the interviews, we had participants explain their interpretations of the specific response delays they reported. Interpretations of response delays varied between participants, contexts, and communication partners.

Because of the pervasiveness of mobile phones and expectations of others' availability within this demographic, - other than in cases when a message sender believes their communication partner unable to respond - when a delay in response carries on longer than the upper bounds of the average perceived responsiveness window (approximately 5-10 or so minutes according to our sample), individuals in our sample typically infer that someone has seen the message and that the message recipient is choosing to delay responding. Earlier we described that one participant generally knows when her communication partners are or are not available based on their schedules, which enables her to adjust her expectations of their responsiveness.

Likewise, believed familiarity with others' schedules affects the way some emerging adults we interviewed interpret response delays. For example, in the case of one participant's friend who is a basketball coach, her expectations of this person's responsiveness changes (become more relaxed) as she infers that they are at basketball practice. She may expect fast responses as basketball practice gets started, but when her friend stops responding, she's able to rationalize that this is because she's at practice. Thus, there is no evident negative impact of the response delay. However, when she presumes a person is available to respond because she cannot determine what else the person may be doing, the response delay is not interpreted as favorably, even if she's grown to expect it from this person.

> My other friend, I know for a fact, she won't answer It until she feels like it. It might be only 15-30 minutes, or like an hour, so I just expect it... Sometimes she gets back to me but it's weird because she doesn't like it when her boyfriend responds to people's texts messages really fast when they're doing together. But she won't answer anyone's texts if she's with her boyfriend. Even if it's all day, it takes a while, but… you're just like, whatever. (Mariah, female, age 24)

In this case, the participant knows that the person is receiving her texts but is choosing not to respond, which she finds weird and – based on her tone – a bit frustrating. Interpretations of response delays can tie back to expectations formed by *prior communication experience*. If a response time is in line with what is usual or expected from someone they have communicated with frequently or from someone whose mobile phone behaviors (e.g., phone checking) they are familiar with, then their responsiveness does not attract attention or raise concern.

***Violated Expectations*.** In several cases, delays described by participants stood out more when response delays were especially out of character based on prior experience with the communication partner. Emily encountered one such instance with a friend who she can usually expect to be very responsive:

> There was one time when she was at her cottage, and I didn't know that. And so, she didn't respond all weekend. So I was like, "Oh, that's kind of weird." 'Cause she usually responds pretty fast. It wasn't anything as important, but I'm used to her responding fast. So, when she didn't, that was kind of weird. (female, age 22)

Because Emily is used to this friend responding quickly, this unresponsiveness drew Emily's attention. EVT (Burgoon & Hale, 1988) attributes this attention to the lack

of response from her friend. The participant expects fast responses, but when she didn't hear back all weekend – indicating a violation of her expected behavior – she was perplexed by the silence.

***Relationship to Communication Partner.*** Participants also shared differences in response delay interpretations just based on who the person was in relation to them. For example, with the following participant, although she related her mom's response delay up to being "bad at text messaging" based on prior experience and awareness of her mother's mobile phone behaviors, her interpretation of a new male friend's response delay was based on the idea that he is a new potential romantic partner.

> Mariah: If it's my mom, I'm like, "Okay, she must not have seen it," 'cause she's really bad at text messaging. If it's a guy that I'm talking to, then I get like really nervous…
>
> Interviewer: Like a guy in a romantic sense of something?
>
> Mariah: Yeah.
>
> Interviewer: Why do you get nervous if you don't hear back?
>
> Mariah: I just feel like… I don't know. It's like a girl thing. I'm one of those girls where it's like, "Oh, if he doesn't text, that means he doesn't like me. He's not interested. We made plans. He's canceling. What's going on?" I tend to overdo it – I know that I do – but I really can't help it. (female, age 24)

The participant is interpreting the responses very differently based on her relationships with the communication partners. Whereas her mom's response delays are written off as a lack of efficacy at text messaging, a response delay from a person she's romantically interested in carries much more weight and is attributed to the other

communicator's motives; although she brushes off her nervous reactions to a lack of responsiveness from potential romantic partners as being a 'girl thing', she assumes that delays from these kinds of communication partners symbolize a lack of interest or a looming plans cancelation.

In line with what we anticipated prior to the study, in cases such as those involving persons of romantic interest, response delays often *are* interpreted as increases in conversational distance and a reduced sense of closeness between themselves and the other person. This is compatible with what we also know about delayed response time often being used as a tool of self-presentation with romantic interests (Gray & Ellison, 2013).

***Comparison to Self.*** Just as self-comparisons can affect the expectations individual people hold for others' responsiveness, they can also impact the way people interpret the response delays. Maureen explained that she actually does not spend time trying to interpret response delays because she herself can misplace her phone and also is late to respond to other people:

> Yeah, I lose my phone and my keys about every day, so I always figured…I mean, I don't think too deep into that type of stuff too often. But I'm sure there's been times where [my roommate] like didn't text me back or… I don't think anything of it, 'cause I know things happen. (female, age 20)

The response delay violates Maureen's expectations of responsiveness, yet instead of interpreting it as a negative event, she is accepting because she can relate to the situation. If she had not experienced a similar barrier to responding in the past, it is feasible that her interpretation and corresponding reaction to such a delay might be

more negative or severe. Across the board, in many cases where people are able to relate to another person's unresponsiveness, they do not see the delays as a distancing or negatively reflecting of the status of the communication partners' relationship.

Generally, when response times fell beyond the expected response windows – a window which was strongly impacted by prior experience with communication partners – participants sought to interpret their meaning in cases when response delays violated their expectations enough to be detected, such as Burgoon & Hale's (1988) expectation violation theory predicts. Of all response delays, those that appeared to receive the most attention and self-reported speculation from participants were those from communication partners who were not as familiar or close with the participants. Response delays from less-close others were more likely to be related to potential disinterest or rejection. Related research has shown that weak ties are likely to feel disliked or rejected as a result of non-normative response delays in asynchronous communication (Tu, 2002), and it is likely that this effect ports over to semi-synchronous communication such as text messaging. Meanwhile, comparisons of another's responsiveness to one's own behavior also related to participants' interpretations of message response time, both in favor of and against the communication partners, depending on one's own prior behaviors and attitudes.

**Reactions to Response Delays.** Reactions to response delays varied between participants and situations, but there were several kinds of reactions that came up multiple times throughout data collection: emotional reactions, confrontations, and compensation behaviors. These reactions were based on negative valence interpretations of the expectation violations.

***Emotional Reactions.*** One of the things most commonly expressed by interviewees when talking about response delay experiences was emotion. Generally speaking, negative emotions were expressed either about the situation, about the person his or herself, about the relationship with that person, or about some combination of the three. The emotions that were relayed over and over by many of the participants included anxiety and nervousness, frustration and anger, and confusion.

Over the course of the interviews we witnessed that individuals' emotional reactions to response delays varied based on who the people were communicating with. Mariah described different reactions to response delays from her friends, her mom, and potential romantic interests:

> Mariah: It bothers me when I have plans, and people aren't responding to them, and letting me know where they are; I get really antsy.
>
> Interviewer: So you said you feel kind of antsy. Are there any other things that you feel when you're waiting?
>
> Mariah: Kinda annoyed. It depends on what it is. If it's my friends, and they're not texting back, I get really annoyed. If it's my mom, I'm like, "Okay, she must not have seen it," 'cause she's really bad at text messaging. If it's a guy that I'm talking to, then I get like really nervous. I'll send something, and then you wait for it and you wait for it, and then I get really anxious. I get nervous. (female, age 24)

Emotional reactions to unresponsiveness described by participants were universally negative, although ranging in severity. The most prevalent emotions discussed were anxiousness, frustration, and anger. Anger was more likely to be related to cases when people expected others to be available and presumed response delays

were purposeful. Confusion or hurt was associated with instances when participants couldn't determine why they weren't hearing back from someone as quickly as they expected.

> I was just confused. I was, "Why aren't you texting me back?" I mean, I was a little hurt because I was, "Why are you ignoring me, like... " I knew he was up north, and I was, okay, maybe he's just hanging out with his family. But yeah, it was a little hurtful. (Alice, female, age 19)

Generally speaking, not being able to reach someone when they're presumed available is an experience that has made nearly all of the participants upset at one point or another. Prior to performing this research, there were varying findings about emotional impacts of response delays; although the overwhelming majority of research showing that response delays were associated with feelings of anger, anxiety, and those of upset over the perception of being unimportant or disliked (Hall, 1959; Levine, 1988; Scissors & Gergle, 2013). But there was also research showing that between more intimate communication partners, response delays could be interpreted more positively as the delay in response can demonstrate a comfort in the relationship (Burgoon et al., 1989). Ultimately, we found that the context played a role in interpretations of and reactions to response delays amidst the sample, as even those experiencing delays from significant others reported being negatively affected by delays that were not expected.

We expected based on prior research that the experience of response delays – which serve to increase conversational distance between interaction partners (Burgoon et al., 1989) – might be tied to individuals' *perceptions* of increased conversation

distance and inhibited intimacy. Through talking with participants about their interpretations of delayed responses and emotional reactions, many cases in which participants expressed hurt feelings were associated with purposeful unresponsiveness and perceptions of distancing on the behalf of the communication partner.

***Compensation Behaviors.*** Prior research on expectancy violation theory has demonstrated that people sometimes react to expectancy violations via compensation behaviors, which are attempts to elicit desired behavior via adapting their own behavior (Burgoon & Hale, 1988). In face-to-face communication this can manifest in adjusting standing distance or vocal volume, but prior to conducting this research, it was unknown whether or not people would perform compensation behaviors in the face of response delays – given that compensation behaviors are typically nonverbal behaviors performed in person at the time of the violation – and, if performed, what these technologically-mediated compensation behaviors might be. Compensation behaviors manifested in reaction to response delays that not only violated people's expectations but that *persisted* in the form of non-response or silence longer than the participants were willing to tolerate. The two kinds of behaviors we heard described in response delay narratives that appeared to be compensation behaviors were 1) sending additional text messages and 2) modality switching (or changing media used to communicate) -- both aimed at eliciting a response.

Several participants mentioned sending additional texts to their communication partners when they hadn't received responses when they were expecting to and wanted to compel the other person to respond. One such participant Mariah (female, age 24)

reported that she texts again when she doesn't hear back but that she did this even more when she was younger, as if she is aware this may not be a desired behavior.

> Interviewer: What do you do when you send a text and you don't hear back from them?
>
> Mariah: Sometimes, [chuckle] I text again.
>
> Interviewer: Yeah.
>
> Mariah: But I'll text like... Now... When I was younger, I used to be really bad at it […] So, then I would text, and then text something, and then text something.

Mariah in particular also acknowledged that seeing read receipts – confirming her communication partner's receipt of the message – and then not hearing back from them prompted her to send additional messages. In this case, there was no chance that the person was not available to read her message, so she messaged them additional times to try and elicit a response:

> I have this friend, he... My favorite thing about him is he has the stamps, like the time stamps. So I can see when he reads my text, so I know when he responds, and he's the only friend that has it. If we're making plans for that night to do something, he's really hard to get a hold of, especially as the night goes on, so you have to constantly keep texting him. And one time, he went like a whole hour, and I was like, "Where are you?" (female, age 24)

Nearly half of the participants (9 out of 20) described instances when they continued to try to contact someone using the same communication method to elicit a response from them. Tricia described a particularly dramatic episode in which the content of her communication was urgent.

> I called her at least 30 times within five minutes. She was not answering the phone. And she left it at home. I was so distraught. Well, she told me this later, that's why she didn't answer 'cause it was at home. (female, age 21)

*Modality switching.* Modality switching – the action of changing channels a dyad is using to communicate (Ramirez Jr. & Zhang, 2007) – is another behavior witnessed across several interviews in reaction to response delays. This involved message senders expanding their use of different messaging channels from text messaging to solicit responses from their communication partners. Over half (11 out of 21) of the research sample mentioned having switched modes of trying to contact someone in instances of response delays. The most common kind of media switching we heard people describe during interviews was switching from text-based mobile messaging to voice calling. One such participant described this behavior when he couldn't reach a family member he was on the way to meet.

> So in the middle of the way between Lansing and Flint, I just texted him telling him I'm coming his way, supposing he's awake or something. So yeah, sometimes when he did not text me back I just called him. He did not answer; I kept calling him back and back and back... (Abe, male, age 25)

Another participant experienced an issue where she couldn't find her keys. She switched back and forth from text messaging and calling to try to elicit a response from her roommate to help her solve her urgent situation.

> So like, I was like texting and calling her, hoping maybe it'd go off or something. I've called her like three times and sent all these texts and I was like, "Get a hold

of me as soon as you can. I can't find my keys so I can't go do anything if my keys are... " (Tony, male, age 21)

As mentioned earlier, the most common type of modality switch we heard described in response delay narratives was the switch from text-based mobile messaging to mobile voice calling. The precise reasons why participants thought switching channels might work to elicit responses was unclear. Whereas a change from sending messages from a channel someone predominantly uses on desktop to a mainly mobile channel might be done because availability is more likely on the mobile channel, other kinds of switches that both involve mobile devices could be used to signal severity based on immediacy of the channel (e.g., switching from text-based to voice-based messaging). Additionally, recent research synthesis by Ling (2016) has demonstrated that for several decades now, voice calling has been a way to indicate urgency or an emergency. In the case where a communication partner is not responding to a text message, choosing a second method of contact alone may be a way of signaling an urgency hear from the other person – or even an emergency. This should be investigated more thoroughly in future work.

***Confrontation.*** One of the reactions to a response delay described by several participants is an actual confrontation, where the person awaiting a response confronts the person who delayed responding, specifically calling out the delay or non-responsiveness. These confrontations were mostly described as face-to-face interactions where the participant voiced their grievances with their inability to reach the other or with the other person’s lack of response.

One example we heard was from the participant Annie who claims that she confronts her boyfriend when he's not responsive when out with friends:

> I think I'll go out, and I may not be as attached to my phone as when I'm just hanging out, or when I'm just by myself throughout the day, because I'm like more in a social situation… But, I've confronted him. I've definitely confronted and told him like, "I don't understand why you don't even text me all throughout the night." (female, age 24)

In some situations, directly addressing the delay is not saved for the next face-to-face interaction but rather occurs as the non-response persists and people wait to hear from their communication partners. An example of this was with the participant Penny, who texted her friend multiple times to express her frustration with not hearing from them.

> So I texted him, "I'm here, I don't see you, I'm sitting at the bar." And then there was no response, I was like "Okay, that's kind of weird." And then 9:10, 9:15 roll around, and I'm like "dude, where are you? This is really weird..." And I think I stayed until 9:45, and I just sipped my beer. And at 9:30 I was like "Okay, I get being late because you usually are, but this is getting a little ridiculous." I was like "this is really weird." I was like "did you just seriously stand me up?" I ended up finishing my beer, paying for it, and drove to his house, to his apartment, 'cause I was like "what the heck! Are you really just going to blow me off? What came up that you couldn't even have the time to text or call me to let me know you weren't going to make it." (Penny, female, age 24)

In this example, we actually have confrontation occurring alongside compensation behaviors; she attempted to elicit a response while also confronting the non-

responsiveness that was making her upset. Technically, one could argue that she also engaged in modality switching by driving to his house to engage in a face-to-face interaction.

Looking across the confrontation narratives within the data, confrontations tended to be coupled with contexts in which the contents of the message sender's correspondences were urgent, in which delays had continued to the point of presumed avoidance on the part of the message recipient, and in cases which individuals appeared to feel comfortable enough to directly address the non-responsiveness with the "perpetrator". Conflict and disagreement often play a role in relationships of surfacing stressors and attempting to resolve them, for the benefit of the relationship. This is more likely to occur when individuals have higher degrees of trust, liking, and closeness (Scissors & Gergle, 2013). Thus, it's unsurprising that we hear most of the confrontation related to response delays expressed about communication partners with whom participants felt particularly close.

***Exacerbated Impact of Perceived Purposeful Response Delays***. In a few cases, participants displayed even stronger negative reactions to response delays when they were certain that the communication partner should have been available to respond and was *choosing* not to. As previously mentioned, there are several ways that people can use context clues around them to infer that another person is available to respond, be they implicit or explicit. Throughout the interviews, when these cues were present, it was particularly frustrating for participants to not receive responses quickly. Tom brought up his experience communicating with a coworker that over the course of

time revealed itself not to be very rewarding because of her delayed responses when it was evident to him that she was available to respond.

> Tom: I got a coworker…or like a coworker before, like I met this girl. I was talking to her like maybe that would be a relationship…awful, actually.
>
> Interviewer: Really?
>
> Tom: Awful, just awful.
>
> Interviewer: What do you mean by that?
>
> Tom: I would send her a text or when she would send me a text, saying, 'Hey, what are you doing tonight?' I would respond within like two seconds and say, 'Nothing. What are you up to? You wanna hang out?' Nothing the whole night. And what are you doing? You just texted me asking what I was doing! …And then bam! (male, age 25)

The exacerbation of availability cues on reactions to response delays may be particularly frustrating or hurtful in these cases because the person knows the person is available to respond and interprets their lack of response as a choice. This can be something people take quite personally, feeling potentially rejected by a person. However, if they sense or observe that this is something that certain communication partners do frequently, regardless of audience, they may compartmentalize a person as being a "bad responder" and take response delays less personally in the future as they lower their expectations of responsiveness from them.

**Summary.** The interpretation of and reaction to response delays is incredibly intricate. From the start, not all response delays are detected and perceived similarly. A one-hour response latency in one situation could be perceived differently from a one-

hour response latency in another. The detection of an expectancy violating delay relates to the believed availability of the communication partner, prior communication experience with them, or their relationship (closeness, type) to the communication partner, in order for them to know whether it was a delay that should cause them concern. Prior behavior can indicate whether a delay is worth attending to, whereas the relationship to the communication partner can impact how the delay is interpreted; for example, a response delay from a new potential romantic partner may be perceived as disliking or disinterest when a serious romantic partner's delay is perceived as something worrisome with respect to the partner's safety. In either case, expectancy-violating response delays were seldom interpreted positively – only negatively, regardless of context and communication partner.

Unsurprisingly, reactions to response delays also tended to be negative. Although expectancy violations can be considered positively-valenced in addition to negatively valenced (Burgoon & Hale, 1988), nearly all expectancy-violating response time delays triggered negative emotions in the participants, swinging from general frustration about a lack of response to anxiety, hurt, and even anger. In some cases, again – contingent on the relationship with the communication partner and context – emotions were also coupled with compensation behaviors (such as texting more or switching mode of contact) and, in more extreme cases, with confrontation. Despite focusing the interviews on primary communication partners, participants recounted examples of response delays they had experienced with both close and weak ties. Across this data set, I observed that the closer the relationship, the more likely people

were to try to elicit responses via modality switching or to confront their communication partners in the case of non-response.

Although priori research utilizing expectancy violation theory (Burgoon & Hale, 1988) already demonstrated negative impacts of delayed responses on relational outcomes such as impressions of communication partners (Kalman & Rafaeli, 2011; Sheldon et al., 2006), that research was conducted in experimental setups with low ecological validity or opportunity to observe how individuals would react to response delays in their actual relationships. Context has such a clear role in the expectations formed as well as the reactions to response delays, that this data collection enabled us to witness new kinds of reactions to response delays – such as compensation behaviors like modality switching.

Perceptions of messages being purposefully ignored or avoided when their communication partners were believed to be available to respond exacerbated reactions (be they emotions, compensation behaviors, or confrontation) as participants were more likely to take the non-response as a personal affront. As Ling (2016) noted, violating a sense of mutual reciprocal availability is often considered a violation of trust.

**Larger Implications of Response Delays (RQ4)**

Aside from observing reactions to unresponsiveness in isolated instances between communication partners, we also wanted to understand broader implications of response delays in a society increasingly expected to be ever-available by mobile phone. More broadly we wanted to investigate how these isolated instances of response delays were or were not seen as patterns, evaluated more holistically by participants

and what deeper meaning response delays and non-response carry for them. Therefore, we asked:

- What meanings do individuals ascribe to patterns of response delays and non-response?
- What are the larger implications of availability expectations and the occurrence of response delays / unresponsiveness?

**Response Delays as Unexpected, Aberrant Behavior.** As we've seen through the course of the interviews and analysis, mobile message response time expectations are complicated with many drivers and moderators. But by in large, expectations for this semi-synchronous medium are that people will respond when they are available, unless they have repeated prior experience with someone not doing so. When people don't respond as they are available – or presumed to be available – this is not viewed favorably. It can not only lead to negative evaluations with respect to the message sender (such as feelings of being disliked or rejected), but can also reflect badly on the delayer. In cases where people *are* "repeat offenders" of delayed responses to text messages, their responsiveness (or lack thereof) can become a part of their communication identity to others.

As previously mentioned, people draw from past communication behavior when drawing expectations of others' future behavior, and several participants had communication partners they deemed as either serially "good" or "bad" at responding. Timely responses are seen as a positive thing in general. People who respond in a timely manner see themselves and see others as "good at responding" or "good with their phones" (e.g., having the phones on them, making sure the phones are charged,

being generally available, etc.). Whereas responding late to messages is not only seen as being “bad” at responding, we also saw that being consistently bad at responding can also be synonymized with other less desirable traits, such as laziness.

Patterns of unresponsiveness by certain communication partners begin to define their communication style as well as themselves as a person in a few cases. Response delays were associated with a few different kinds of existing personal characteristics, such as being easygoing, lazy, and unconventional. Mariah articulated this belief in a connection between personality and responsiveness very succinctly:

> It’s a personality thing. That’s just how she is. She gets to things when she wants to. It’s like, whatever…She’s very laid-back about a lot of things. (female, age 24)

For several participants, a serial lack of responsiveness was related to communication partners’ laziness or “flakiness”. People don’t see the persistent response delays as a lack of interest or as a sign of disliking, per se, but rather a degree of irresponsibility.

> Penny: Like one of my other friends is a huge flake with her phone, lets it die all the time... leaves it at work...leaves it at home...just like doesn't... nonchalantly cares about it.. and I used to live with her so I'm used to being like "OK..where are you?" and her just not having her phone for days.
>
> Interviewer: Does that convey anything to you about her personality or how you perceive her?
>
> Penny: Kind of, she is just like a flaky, flighty person. "I make decisions by the seat of my pants." (female, age 24)

Being “flaky” implies that you cannot depend on the person. From the series of interviews we conducted, it appears that responding late to text messages (or not responding at all) contributed to this flaky image of the other person, but it could also be that late responses are situated in the context of that person already being believed to be flaky or lazy. Regardless, the synonymizing to some extent of laziness or flakiness with delayed responses could potentially bare negative implications for people who regularly do this and are viewed as this kind of bad responder.

Although not reflected in a significant proportion of the interviews, interesting parallels were also drawn between responsiveness and the notion of conventional behavior. In particular, people who were known for being unresponsive to these participants were seen as *un*conventional – or behaving in a way that deviates from societal norms.. A participant Cory compared and contrasted mobile phone attachment styles on both ends of the spectrum, describing his beliefs that people who aren’t as attached to their phones or as responsive are not as much of a part of mainstream society. “

> If I had to characterize friends who are glued to their phone in comparison to ones that are not, I think the ones that aren’t [glued to their phone] are a little less in touch with, like, the other popular parts of society… I think characteristically they are less into the mainstream of our society – not that they’re hipster or anything but…It’s just they choose to be more invested in other things… It’s just..they’re like ‘Oh yeah, I didn’t have my phone’ or ‘I was doing something else.’ I mean, I guess you can never know if they’re telling the truth unless you’re actually there, but most of the time, I’ve seen them… When I’m

> around them, they're not very good with their phones either… I know they're not checking. (male, age 21)

Of note, this participant assessed that his friend is less available on his mobile phone because of other qualities that this person possesses. It is not the lack of attachment to his phone that renders his friend unconventional, but it is rather that his friend is unconventional that explains why he is unavailable by mobile device. What we can't infer without speaking with the communication partner themselves is whether or not they are purposely trying to be unattached to their phone to disconnect from mainstream society or whether it's just an effect of them focusing on other things.

**Impact on Relationships.** In a few cases, the negative emotions expressed were related to how response delays made someone feel about their communication partner or their relationship with that person. This tended to occur more with serial response delayers, where participants articulated that the continued unresponsiveness from the communication partner caused the other person to feel undervalued in some way. One example of this is with a participant who was in a sorority at college and experienced continued unresponsiveness from a sorority sister.

> I know she cares about me, and she loves me and all these things, but she doesn't text, or she doesn't initiate a conversation, but then when we're around each other it's like we're best friends. I know like, she's like, "Oh, I'm too busy to text", and you *know* she's not too busy to text because she might be texting other people or… there's no such thing as being too busy to text someone, I don't think. Or she could text me, "I'm busy, I can't…" (Corinne, female, age 20)

This participant was confused and conflicted about the behavior of this friend. To her, unresponsiveness didn't make sense coming from someone who claims to really care about her. It also hurt her to know that this person was texting other people and claiming she was too busy to text; this came off as an excuse.

In another case, Penny shared that the flakiness of one of her friends was something that she picked up on over time and made her feel like the relationship could not truly reach its potential.

> It stands to reason, like at first, when I was first becoming friends with her, it was very difficult because I'm a very- I'm not super-structured. I'm kind of messy in my life anyway, but I'm enough attached to my phone that I wouldn't just leave it dead in my kitchen for two days. So we'd try to make plans, but then I would not be able to get a hold of her. I think, in a way, I mean she's still a really good friend, but it just puts a damper on having a relationship because like how... if we make plans to hang out, and then I can't a hold of you and you can't get a hold of me... then how are we going to hang out?? So you're gonna blow me off! (female, age 24)

In this participant's case, the inability to reliably communicate with this person (which is also a pre-cursor to spending face-to-face time together) precludes the relationship from continuing to develop in a mutually agreeable way. There were more severe cases described within the interviews, where people made decisions to disengage with a potential romantic interest because of this kind of unresponsive behavior.

According to Ling (2016), there is a weight of mutual expectations when it comes to being available by mobile phone, which "becomes element in the legacy of trust

between partners" (p. 2); a failure to take the mutual obligation of being available to one another by phone seriously is not just indicative of a response time violation but of a violation of this mutual social obligation.

**Divergence in Responsiveness Preferences.** Another reality that became apparent during data collection and analysis was the sheer disagreement around certain norms and preferences for participating in mobile communication that contribute to different responsiveness practices and differences in the interpretation of response delays. Several of the participants varied dramatically in the degree to which they wanted to engage in text "conversations" in addition to the way they felt about when it was or was not appropriate to respond when engaged in face-to-face interactions with other people.

With respect to text conversations, people spoke about instances when the texting back and forth was immediate, almost like real-time conversation, or when it was purely social or conversational in nature, rather than goal-based (like seeking information or attempting to coordinate). Rather than asynchronous texting spread out over the course of hours or a longer period of time, the rapid exchange of text messages renders text messaging semi-synchronous, with communication partners both available and sending and receiving messages in almost real time. Like we identified when discussing participant expectations of responsiveness, perceptions of being in these rapid exchanges impacted participants' response time expectations.

Even outside of an actual real-time text conversation, one of the participants Tony remarked that there's no real beginning or end to the conversations even with a lot of time passing between the text messages:

> Throughout the day, you can just keep texting. And I say “Goodnight” or “Good morning” kind of thing, so I guess it ends. But if you’re talking about something that night and you say “goodnight”, you can start it right back up in the morning. (male, age 21)

In fact, Tony noted that he preferred a conversation that spanned the day via text messages as opposed to having a condensed phone conversation.

> Still the same conversation, so as far as the stuff that’s talked about and how much you talk about it, probably takes more time to talk about it than talking on the phone, but it’s definitely more convenient than spending an hour and a half talking about it at one time on the phone, instead of texting here and there for a few seconds throughout the day.

Tony doesn’t have any conceptual issue with the notion of text conversations persisting over long periods of time, and said he’d much prefer this to a longer phone call.

> As far as calling, you could call somebody... I'm never gonna do this again, but high school calling with my girlfriends, talk like three, four hours. Now I'm like, "No, there's no way I'm talking three, four hours. That's a lot time, like I can do so much more in three or four hours than sit and talk on a phone. Texting, I can have a conversation all day, but I can still be getting things done. It's not taking even more time away.

When it comes to the real-time text conversations, we heard several participants share that they didn’t want to participate in them and would delay responding to someone they perceived was trying to engage in one.

The desire of some to go back-and-forth rapidly via texts while others are reluctant relates to another area we observed divergent preferences. Although many of the participants report multitasking and feeling as though it is appropriate to continue engaging in text messaging while they are in meetings, classes, out with friends, and so on, several participants indicated they would not engage in this behavior in these contexts. One such participant described how she uses these perceived norms of when it is and isn't acceptable to respond to messages to decide whether she makes herself available to be more easily notified about incoming messages, such as by enabling the sound on her device.

> I mean, if this is generally accepted that... Like at church, obviously, you shouldn't be having your ringer on and your sound on because the main focus of church is to listen to the speaker or in class, the same thing. My main focus is listening to the speaker or at work, you're supposed to be working. So, you don't need to be distracted by the sounds or if you're having a conversation with somebody, you don't want the phone constantly going off, but if I'm at home, and it's just me, then, it doesn't really matter. (Serena, female, age 22)

The discordance in norms here has the potential to have a lot of impact if they differ between communication partners, as people are bringing different expectation mental frameworks to the table. For this same participant, when she is spending time interacting with others in person socially, that is also not the right time to be on your phone, and it bothers her when her company doesn't share the same mobile etiquette with her about this.

> For some of my friends, I'd say that they check their phones, like they all just hold their phone in their hand and it's glued to their hand like until they die. And then for some of my friends, when their phone dies, that's when it's time for them to go because they won't bring their charger with them. 'Cause I hang around mostly guys. I just get along with other guys. But they don't have purses and stuff, so they don't have their chargers on them all the time. They'll like leave them in the car. So, when their phone dies then it's time to go. Or, some of my other male friends, they'll just ask me for my charger. But they use theirs mostly, I think, for social networking. Always on Instagram. Always on Facebook. Always talking on it. Always texting on it. (female, age 22)

Previous research has shown that individuals engaging with their phone to the point of ignoring their face-to-face partners is a form of snubbing, appropriately coined "phubbing" (a portmanteau combining the words "phone" and "snubbing"; Roberts & David, 2015). "Pphubbing" (which receives an extra "p" to signify *partner* phubbing) is considered "a near inevitable occurrence" (p. 134) due to the ubiquity of cell phones and common proximal interactions between spouses and significant others. Negative connotations of others phubbing appeared to extend beyond just romantic contexts within the sample. Amy went so far as to call this behavior rude.

> I mean, if we're out, if we're doing something, I usually check my phone less frequently. And if we're out to dinner, I usually try not to be on my phone, because I think that's kind of rude when you're with a group of people. (female, age 21)

For those that *do* keep themselves available throughout these kinds of face-to-face activities, we know in certain cases people presume that their communication partners to do the same. This may contribute to general presumptions that people are perpetually available and violated expectancies when communication partners opt not to respond regardless of where they are or what they're doing. Even if someone is busy, they, in theory, can never be too busy to respond, in the view of these message senders.

**Reflection on Major Emergent Themes and Contributions**

Two of the most prominent themes that this research unveils are 1) how incredibly complex the notion of availability to respond is and 2) how serial unresponsiveness translates to inferences about static traits of communication partners. As has been previously pointed out by a host of mobile communication researchers, expectations *are* that people are persistently available to respond and should do so quickly, but it's not always that simple. This research also suggests new relationships within the expectancy violations theoretical framework that can be tested in future research. See Table 2 for a summary of the major contributions of this work.

**The Important Nuance and Impact of Availability Expectations.** Availability expectations are important because they are arguably the most critical drivers of responsiveness expectations. In other words, when someone is expected to be available but then doesn't respond in the time window the other communication partner expects, people attend to the response latency and try to sense-make of it. Often the sense-making of the response latency lends itself toward drawing negative conclusions

about the other communicator and/or the message sender's relationship with them.

Table 2: Key contributions of this work

| Contributions of this work |
| --- |
| 1. Exposes prevalence of concern of being involuntarily available to assess incoming messages as candidates for potential response. |
| 2. Surfaces a tension and inconsistency in prioritizing co-present others vs. non-present message senders ("technosocial pecking order"; Ames, 2013). |
| 3. Establishes perceptions of others' availability as a salient antecedent of responsiveness expectancies. |
| 4. Suggests perceived availability as a moderator of the relationship between response delay evaluations and reactions in the conceptual framework of EVT (Burgoon & Hale, 1988). |
| 5. Highlights a complicated role of communicator reward valence / communicator relationship in individuals' self-reported responsiveness as well as in their interpretations of response delays and the impact of delays on perceptions of intimacy. |
| 6. Reveals substantive differences in reactions to response delays and strategies utilized to elicit responses between different kinds of communicator relationships. |
| 7. Suggests cumulative negative impacts of response delays in mobile communication on impressions of communication partners outside of isolated impacts predicted by EVT (Burgoon & Hale, 1988). |

There aren't truly responsiveness expectations in a void of availability expectations; even in cases where we have no prior communication experience with a communication partner or don't have any specific availability information about them, we may draw upon societal norms that people are "always on" with their phone nearby to infer that someone is likely to be generally available to respond to text messages and other forms of mobile communication. What we saw throughout the course of this research, however, is that the specificity and strength of one's availability expectations could vary.

Ultimately, if someone believed another person to be attending to their mobile device and available to respond within a short time frame, it had the potential to impact their reaction to the response delay; through the stories we heard and analyzed over the course of this research, reactions to response delays appeared to be exacerbated.

Although prior literature argues that there is a new notion of expected perpetual availability, this is an oversimplification of reality. Ling (2012) stated that mobile phones and communication have so become a part of our "social fabric" that we believe those we want to reach out to within our social spheres are always available. However, there was not a universal belief even among the sample of emerging adults who have grown up participating in mobile communication that availability of others was a constant expectation. Throughout the course of conducting interviews and subsequent coding and analysis we found that there appear to be expectations of varying *degrees* or *kinds* of availability. The semi-synchronous nature of mobile communication means that there are times when both people will be available to communicate in a real-time fashion and other times when an interaction is asynchronous because of longer periods of non-response to messages. This aspect of mobile communication in and of itself is a reason why availability expectations can be so complex.

When we dig into the actual "mechanics" that make availability expectations complicated, a few specific elements emerge, such specific knowledge of others' availability status and attention to their device and different attitudes about potential barriers to availability. First, complexity stems from an inability to truly know whether or not another individual is attending to their mobile device. Between communicating

partners, message senders' awareness of another person's activities that could feasibly impact their availability to respond varies.

Consistent with prior research on the semi-synchronous nature of mobile communication (Glaser & Tucker, 2004; Ling, 2012), the interviewees also displayed a range of use characteristic of mobile communication: both the rapid exchange of messages and message exchanges marked by significant delays. With the ability for two communicators to exchange messages at either end of this spectrum, it means across the board there can be no consistent expectations of responsiveness specific to this medium. In asynchronous communication, such as an earlier era of email exchange between two people using computers, rapid exchange of messages was not expected. With synchronous communication – such as voice calling – both people *had* to be on their devices to participate. With text-based mobile communication, devices *may* or *may not* be physically on a person. An example of a time when a person typically would not be able to have a device on them or be able to use their device is while they are sleeping, using the shower, or have a device without power; we posit this concept as involuntary availability inhibition as one cannot receive messages in these instances based on factors outside of their interest.

Attention to one's device (such as checking for notifications), the efforts taken to keep the device charged (such as carrying mobile chargers around when away from one's home), and the degree to which one keeps their device close to themselves, on the other hand, are examples of mobile behaviors that also impact availability and vary person-to-person; we consider these to be voluntary availability inhibitors. In fact, they are intentionally or unintentionally availability choices that mobile phone owners are

making. Prior research shows that people don't always want to be available and dislike the pressure associated with having to respond to mobile phone messages (Duggan & Smith, 2012; Hall & Baym, 2011). Regardless of a person's conscious motivations to be available or not, decisions to keep your phone charged, keep your phone within arm's reach, and check for notifications are all ways a person keeps themselves "dialed in" to receive messages.

This is the reality of the mobile communication landscape – that there are many factors driving availability – but when it comes to individual message exchanges, the message senders do not always have the awareness of the other person's actual availability. We can't always know whether another person does or does not have their phone on them, or their phone charged, and beyond. We found across the interviews, people had to rely on their own beliefs and assumptions about the availability of their communication partners. When we dug deeper into interviewees' strongly-held or matter-of-fact beliefs about others' availability via mobile phones, we discovered that these usually derived from close knowledge of the communication partners' schedules or whereabouts. The majority of communication partners discussed in interviews were self-reported as close connections to the participants, and this closeness manifested itself as awareness of how others spend their day-to-days. Although not directly discussed, it's probable that this may have come to be through either direct disclosure of a dyad's respective contexts throughout the day or via prior experience even of response delays that shaped someone's knowledge of the others' schedule and future expectations of availability. Despite special knowledge of another person's typical schedule or whereabouts, this did not always translate to accurate prediction of

someone's response time or true availability. Often times the assumption that another person was available to respond was mismatched with the reality of the message recipients' situations, as we learned through the telling of response delay anecdotes from the participants.

Another significant issue is individual differences in what are considered barriers to being available (and, thus, responding); people have different attitudes toward norms of mobile phone use in varying contexts such as during class, work, at the gym, being in the presence of others, etc. With message senders and recipients alike determining for themselves when they do or do not deem contexts inappropriate for exchanging messages or attending to their phones, there are possibilities for a message sender to presume a message recipient available when the recipient does not deem him or herself so. There *are* some known trends in what people think is appropriate versus inappropriate contexts in which to use phones. A recent survey by Pew Research Center showed that although certain kinds of contexts are more widely viewed as appropriate places to be on the phone (such as while walking down the street or on public transit), but "only 38% think it is generally OK for others to use cellphones at restaurants and just 5% think it is generally OK to use a cellphone at a meeting" according to this report (p1., Rainie & Zickuhr, 2015). Nevertheless, as part of this same survey, Rainie and Zickuhr (2015) also found that "89% of cellphone owners say they used their phone during the most recent social gathering they attended" (p. 2). Although phone users' attitudes may generally show disapproval about phone use at social settings like restaurants, their own behavior tells a different story.

Differences between one's own behavior with their attitudes of appropriate phone etiquette also can conflict with mobile communication partners' own attitudes and behaviors as we witnessed via the interviews. This lack of congruence can translate to violated responsiveness expectations because one was not available when he or she was expected to be. Across the interviews, we perceived this potential for discord based on both varying accounts from interviewees of contexts in which they did or did not feel it was appropriate to use their mobile phones as well as through stories they told about situations wherein their communication partner was not available to respond during a time when the interviewee expected them to be based on the context.

One of the most evident impacts of people believing someone is available and then experiencing non-response is that there is an inclination to more quickly attend to the delay and to draw more negative conclusions about the delay. For example, we heard participants recount beliefs that the other person might have been *purposefully* delaying responding. The belief that someone might be intentionally abstaining from responding had the potential to make message senders feel ignored, slighted, and/or hurt. The other common outcome of not hearing back from someone expected to be available was anxiety or concern that something might really be wrong; an external, negative factor might be *preventing* the communication partner from responding. Secondary impacts of response delays in these cases were often an inability to microcoordinate around something that required a timely response. Examples from these research sessions include an instance when someone was unable to reach their partner from the grocery store to figure out what else they needed at home and a

frustrating lost opportunity to win tickets to a concert because of a participant's mother's non-response.

Interestingly, the ubiquity of mobile phones and internet (via smart phones) has not only played a role in increasing and reinforcing our expectations of fast response time from others but also means that all of our other tools on our devices come with us – calendars / scheduling tools, maps / navigational tools, etc. There is a strong likelihood that as individuals get more accustomed to having a computer and microcoordination affordance at our fingertips, they are more generally adjusting the way they go about their daily routines, potentially creating difficult circumstances related to planning everything last minute (such as going to the ATM to extract cash but discovering the ATM is broken rendering cash unavailable).

**Possible Extensions of EVT.** In this work, we saw new concepts emerge as critical antecedents of expectancies and potential drivers of reactions to response delays. We also witnessed new potential relationships between these new concepts and existing relationships in the EVT framework. Although several of these potential extensions of EVT have already been mentioned earlier throughout the results and discussion, they are summarized here. First, communication context emerged as an important antecedent of perceptions of response delays and reactions to response delays, especially as it is unshared between mobile communicators. As participants detected expectancy-violating response delays from their communication partners, their interpretations of the delays and the extent of their reactions appeared to relate closely to the communication context.

Additionally, perceptions of the communication partner's availability not only drove response time expectancies but also appeared to impact how individuals reacted to the response delays. Who the communication partner themselves was appeared to influence the interpretation of and reactions to response delays. Delays from weaker ties tended to be interpreted as more threatening / worse existentially for the relationship, whereas reactions to response delays form closer ties tended to be more intense, as closer ties have more channels available to them to attempt to elicit responses and can more safely react strongly to delays without threatening the existence of the relationship. Future research can empirically test the existence of these relationships.

**Serial Unresponsiveness as Unconventional Behavior.** Prior to completing this research, we expected to find that individual instances of unresponsiveness would receive negative reactions, but one thing we discovered that we didn't expect was that repeated response delays from the same person would lead to more persistent attributions made about the delayers.

We expected one effect of repeated non-response would be an impact on future expectations because we know that prior communication experience is an antecedent of communication expectations. However, the impacts extended from merely influencing the future expectations to people drawing broader conclusions about their communication partners. The kinds of traits people ascribed to repeated response delayers included lazy, flaky and unconventional. In some cases, the eventual realization that people *were* a certain way/characteristic appeared to relate to the decisions a number of our participants made that the relationships were not worthwhile

for them to maintain. It is not clear from this research whether general unresponsiveness was a sole or main cause of these kinds of decisions or whether serial response delays reinforced other sentiments the participants already had. In general, however, the "perpetrators" of non-normative response delays were not viewed positively in the context of these interviews.

**Self-Contradictions between Values, Social Norms and Behaviors.** We found several patterns of contradiction in the beliefs and behaviors of the participants that are worth noting. The reality is that so much of what people recounted or declared with respect to others' responsiveness or availability contradicted an expectation or self-view they held about themselves. In some cases, their own values or proposed norms conflicted with their own behavior. The ways they evaluated their own behaviors weren't consistent with the ways they evaluated that of others. The same behavior described from different lenses at different points within the same interview could be evaluated completely differently. It is through painting a full picture of these contradictions and examining them closely that we can begin to articulate the impact of mobile communication and unresponsiveness on human relationships and society.

They may in part be indicative of over-attribution, wherein we judge the behaviors of ourselves in a more forgiving way (basing our behaviors in the context of a situation) than we often do that of others, where we orient toward a more static, personality-based attribution (Jones, 1979).

***Contradiction 1****. "It's not courteous to leave people waiting for your response, but I try to stay present and disconnect from my advice."* Although unresponsiveness is

generally bad, distancing yourself from your device (and rendering yourself unavailable and thereby unresponsive) can be seen as good, healthy, and even strong behavior.

Throughout several interviews, we heard people identify and describe people they think of as bad responders. In this way, some people are *branded* by the way they use their phones. It's these 'hypo-attached' or hard-to-reach individuals who are known for being "bad at responding". We heard that not getting responses from people could inspire confusion, frustration, and hurt feelings. However, there are also people at the other end of the spectrum who are so "glued to their devices", so to speak. We heard criticism that these people were "too" connected to their phones. Being *hyper*-attached is seen as a sort of weakness of character, implying a high need for social gratification, poor social etiquette, and/or a lack of self-control. So, while responding in a timely manner requires you to have your phone and to be available to respond, this degree of attachment to one's mobile phone inspires negative judgments.

Interviewees compare and contrast the behaviors of themselves with those of both hypo- and hyper-connected people. Some participants felt annoyance or frustration with the degree of discord between their own mobile behavior and that of others, using their own behavior as a benchmark for what is more normal or acceptable, and seeing the behavior of their peers as aberrant, excessive or undesirable in some way. A couple of respondents went so far as to laud themselves for being able to be away from their phones for extended periods of time, a behavior that's seen as positive because it demonstrates that someone isn't *too* attached to their mobile phone. It was seen as commendable and strong to be able to prove that you do not *need* to be on your phone

– to be able to exert control and agency over your attachment to it. One participant drew a contrast between himself and teens/people younger than him, saying,

> One thing I think a lot of younger people will lose or have lost is that, like, I mean, I can put down my phone and not mess with it for an hour or two hours, if I'm doing homework. I can do that. I don't have to be on social media and everything. (Cody, male, age 21)

His statement implies that younger people can't *not* be on social media or have to be on their phones at all time, which is viewed as a weakness or character flaw. The nature of responsiveness to incoming messages being viewed as a *choice* is likely what opens the doors for this extent of judgment and labeling of others' behavior.

Lastly, although some participants believe they exhibit healthy degrees of attachment to their mobile phones, some of these same people are the ones who feel very uncomfortable when their phones die. For example, one of the participants mentioned that he frequently had his phone set to "airplane mode"[4] for hours at a time so that he could study and prepare for a big exam. However, he subsequently stated that it bothers him when the battery on his phone dies because he can miss texts from potential customers and lose the chance to make money.

> [On the subject of his phone running out of battery power] It does [make me mad], actually, to be honest with you… Because I told you I'm trying to make some money here while studying for my examination. So, sometimes people, a lot of people, just text me, as you see right now, somebody texted me like a

[4] A phone setting that disables all network connections.

> couple of minutes ago. So, I hate to lose those changes for business. I would love to keep my battery just alive and safe. (Abe, male, 25)

He attributes potential losses in business to only instances when the phone dies but not to the windows of time during which he is unavailable to respond by his own design. The current study did not ask him to reconcile these differences, but it's likely that it's his perceived lack of control over his unavailability in the case of a dead phone battery that leads to negative attributions in these cases.

***Contradiction 2****: "I'm extremely dependent on my phone, but my friends are worse."* It was unsurprising to hear so many emerging adults express strong negative reactions to the idea of not having their phone on them or having their battery die, rendering them unavailable to send or receive messages. Along those lines, the majority of participants also reported keeping their phone on them at all times and frequently checking their phone for messages. And when thinking about degrees of mobile attachment, it is difficult to imagine that strong, negative emotional reactions to being apart from one's mobile device as well as a desire to have it within arm's reach isn't indicative of the *highest* degree of mobile attachment. However, nearly all participants considered their phone use average and believed there were people even more attached than they themselves were. A female participant (Mariah, age 24) said her phone is nearly always in her hand but when asked how she compares to others, she relayed that she doesn't see herself as too attached.

> I'm not as bad as my friends… because I have a friend who constantly keeps going over her data plan and gets tons of over-dues. And we still don't understand how she does it, but she's always on… She's on Instagram, she's on

> Twitter, she's on Facebook. She's on something on her phone… So I don't think I'm as bad compared to a lot of other people. I think [my phone use] is pretty tame.

It's possible that this potential mismatch between the behavior and the attitudes is related to cognitive bias, leading interviewees to see their own behavior in a more favorable light. One example of potential bias at play with this participant in particular is confirmation bias, wherein a person looks specifically for examples of something that confirms or supports their pre-existing beliefs (Nickerson, 1998). This means the participant may have selected her friend who gets overage fees as one example to demonstrate her point that her mobile attachment is "tame" while others is more extreme. But the reality is that she herself (and others like her) may really represent the top tier of mobile attachment. On the other hand, if she is only comparing herself to the people she communicates with once, she may really *be* average. Because she is an emerging adult, in school, at an American university, we know that mobile phones have completely penetrated the market, with most people in this age range owning them. Within this group of highly-engaged peers, there may really be a significant number of people more attached to their phones than she is. However, when we zoom out to the broader American population, it's possible that she is in the upper echelon of phone attachment.

Another participant rationalized her attachment to her phone because she is still occupied doing other things. Emily (female, age 22) shared "I mean I am kind of dependent on my phone, but sometimes I like to think I'm not 'cause I try to stay busy" (p104). By saying "I like to think I'm not," we can infer that Emily is in a way having to try

to convince herself that she is not dependent on her phone, even though she is aware her degree of use of the phone could be characterized that way.

**Device Proximity and Fear of Missing Out.** A few other insights surfaced throughout the course of data collection and analysis that merit being briefly addressed. First, much of this research reinforced what we have garnered over the past decade about mobile phones: that – at least within American society – they function as second skins (Campbell, 2008) and that we are existing in an era where it feels as though we are "always on" (Baron, 2008). Nearly every participant reported keeping their phone either on their person or within arm's reach. However, one participant Cody also relayed that they use their phone to create "space" between themselves and others in their *physical* environments.

> How many times have you been in a conversation and it got kind of awkward or there's a silence, and so the first thing you do is you pull up and you look at your phone? Not because you have anything to look at, but because you just don't want to keep the awkward eye contact. (male, age 21)

It's remarkable that - in technology mediated contexts - while phones are often seen as extensions of ourselves, enabling us to interact with non-physically-present others, the presence of these devices in our hands can also be used to *remove ourselves* from the interactions of those physically near us. This juxtaposition of the phone as both a facilitator of and a barrier to interaction arguably makes us even more reliant on this tool to navigate our day-to-day lives.

Another thing continually witnessed among the student interviewees was their referencing the importance of having their phones charged for meeting with friends on

campus, not missing lunch invitations, and the like. One participant (female, age 21) explained that she brings her charger with her to campus because it has become increasingly important for students to have the use of their phones on campus.

> If I don't have it with me, I feel really lost just because it's hard to get a hold of people. I mean, now having it on campus is a big deal. Yeah, usually, I always have it with me, and I actually carry a second charger with me just 'cause I don't like not having a phone with me. (Amy, female, age 21)

What we heard when people described their attachment to their mobile devices is the fear of not being available and of missing out on other things happening. This participant actually perceives a shift in the extent to which it is necessary to have your phones in order to reach people on campus, as though this has not always been the case. How they got a "hold of people" or whether they had that need to the same degree previously is unclear.

# CHAPTER 5: LIMITATIONS & AREAS FOR FUTURE INVESTIGATION

## Limitations

There are several limitations that should be considered when reviewing this work. First, there are the limitations inherent to using interviews as the main method of inquiry. Interviews are subject to self-report bias; the ways in which people recall events are subjective based on their own experience and perceptions. Additionally, because the interviews focused on soliciting narratives of past events, the data we have is subject to hindsight bias, which means that the interviewees may not be able to remember past events with perfect accuracy. Another limitation of us using an interview method is that we are only speaking with one person and asking them to recount dyadic interactions, meaning only one side of the interaction is understood and procured. Given this, we focused solely on the experiences and perceptions of the participants within the dyads.

This work also focuses on predominantly on personal relationships, rather than seeking to cover all kinds of relationships, such as professional relationship. This is in part due to the sample generally being young and not already operating within professional contexts. Because we asked participants to focus on some of their most regular mobile contacts, this means we received fewer response delay anecdotes about less close relationships than new or weaker relationships.

Emerging adults were the population of interest; thus, we cannot conclude to what extent the observed patterns in mobile attachment, responsiveness, expectations of availability and responsiveness and beyond, transcend this cohort in modern day American society.

Although participants did discuss trends they perceived in their own mobile phone use and responsiveness, this work is not longitudinal and does not aim to discuss changes in norms of availability over time.

Because we focused on text messaging primarily, we didn't tie this work into the full network of mobile communication options (such as email, Facebook Messenger, Whatsapp, Snapchat, etc.). Narratives involving these other mobile channels were surfaced organically by some participants but future work could dial into the host of available communication options and channel blending when investigating responsiveness.

Additionally, this work did not investigate the concrete availability cue affordances of text messaging services that each participant use. For example, iMessage users on iPhones get indicators about messages being delivered to devices even in the absence of read receipts, whereas those using Android devices do not see these cues. iMessage users can additionally see indicators that their communication partner is typing, which is also possible today on other messaging services such as Facebook messenger, Whatsapp, and beyond. The degree to which individuals may or may not be able to adapt to the affordances of their own phone and the signals others' devices are involuntarily giving off is complex and merits further consideration.

**Areas for Future Investigation**

Throughout the course of data analysis, several new opportunities to investigate this space further presented themselves. First, with respect to people being labeled as "bad responders", it's unclear at what point someone acquires that kind of label or association. How many response delays (and to what severity) does it take until

someone becomes labeled as a bad responder? We heard in this research people refer to others they perceive as unresponsive because of a history of response delays, but what this research doesn't establish is how many delays and/or what severity of delays generally occur before someone is seen by their communication partner as a bad responder. In other words, how many expectation violations does it take to affect expectations of response time? It's important to note that this applies more to "new" message threads with this person as opposed to messages within the same window.

We also know from the literature and from these data that people often interpret the delay as the message. There are two important questions that this notion raises that we can't infer from this research. First, although time-to-response may be interpreted by the original message senders as communicating some meta-message, it's not clear to what extent message recipients are either consciously delaying their responses to communicate something beyond message content itself or that they're aware that their response time is being interpreted by their communication partner. We do know from past research across a similar demographic that people will delay responses as a form of self-presentation, in an effort to convey that they aren't overly available or interested (Gray & Ellison, 2013). But these purposeful delays were most commonly associated in dyads where the communication partners were more recently acquainted and lower in self-reported closeness.

Because this research focuses predominantly on participants' communication with their main communication partners, and because we did not speak with the other communication partners themselves, this research cannot conclude anything about whether or not the delays recounted by participants were done knowingly and with the

goal of sending unspoken messages. But the reality is that this is the way that these kinds of communications occur in real life. When one person is waiting for a response from another person, they have only their own devices to infer why the other person is not responding.

Second, although we know from prior studies that there is generally a threshold past which a response is considered late vs. within the expected time frame, but we do not know throughout the course of an interaction – wherein the waiting communication partner may be affecting compensation behaviors, such as sending additional messages – what the compounded effects of unresponsiveness are. This research shows that people do develop heuristics for their communication partners over time that guide the way they set response time expectations, but within one interaction, does continued unresponsiveness exacerbate the negative impact of delay?

Because this work did not quantitatively measure degrees of different key variables and look for relationships between them, we do not yet know what variables may be significant mediators or moderators of reactions to response delays. For example, can we measure the "strength" of expectations as a moderator of reaction severity to response delays? Can we predict when people will respond the most severely to response delays? This data collection method enables us to glean more information about experiences of response delays within the contexts they occur, but without testing the relationships between the variables, it is hard to conclude which variables have the strongest effects on things like emotional reactions to response delays or on things that are harder to measure, such as feelings of connectedness between two people.

Prior research shows that people often use butler lies to save face of both themselves and their communication partners in communication by lying about the reason they've been out of touch. But it also appears possible that one could also extend their silence to make it seem more plausible they are unavailable when they don't want to respond to a text where their response would not be positive. Could delaying a response *be* a butler lie in and of itself? Is there such thing anymore as plausible deniability for a) not receiving a text message? and b) not being available to respond? Future work should investigate when silence itself is used to spare face for both the message recipient and message sender.

Future work should also dig further into the need of students to feel persistently accessible on campus and the impacts of that. Given the perceived changing dynamics of phones being vital on campus to get a hold of others, this bets the question of whether this is facilitating the same kind of social interaction as it always has or whether the social dynamics of college are changing. For example, we know that college is one of the most important periods within humans' lives for social and identity exploration. Arguably, relying on phones to get a hold of people could signify that students are performing a larger amount of activities with the same people rather than relying on happenstance interaction and. Prior to the pervasiveness of mobile phones and mobile internet, were students as much in touch with the same people? How might the social college experience of someone who entered college with a mobile device on them at all time differ from someone in years prior who did not rely on mobile device availability of themselves and others to make plans. Future research should examine downstream effects of increased communication with existing connections on campus.

With regard to microcoordination, we know synchrony between communicators is important for iteratively making plans and that plans sometimes evolve over the course of days (Ling & Lai, 2016), but we also heard at least two participants demonstrate reluctance to respond to contacts who messaged them to make plans. What drives unresponsiveness in these cases? Because we know some members of this demographic do not feel like it is negative to “flake” on tentative plans made, it’s unclear why in these cases the interviewees did not take that route of making tentative plans and then flaking. On the other hand, it’s possible that microcoordination and significant response delays are not necessarily mutually exclusive, as witnessed by the male participant who would delay responding by a few days to friends asking about weekend plans. Future research should investigate what are the differences in the situations or communicators that drive some to make tentative plans while others avoid responding.

# CONCLUSION

Emerging adults' expectations of availability to respond and response time within mobile messaging are complicated. In large part, response delays and silence toward outgoing messages can be problematic for emerging adults today. They thwart coordination, can spur a range of negative emotions (from anxiety, to feelings of hurt and rejection, to frustration and anger), and have the ability to influence one's lasting impression of the delayer.

Expectations are driven by a variety of factors that are applied non-uniformly and not always in line with the way they themselves behave. Responsiveness expectations are generally driven by social norms and prior communication experience but also by availability expectations themselves. Digging into specific cases of response delay episodes surfaced that emerging adults do not always necessarily presume that their communication partners are perpetually available, although generally speaking, outside of sleeping and other specific kinds of activities, there were not many instances in which communication partners were viewed as completely unavailable to respond. Our cohort of emerging adults had generally strong preconceptions about when their primary communication partners were or were not available, but they were not always accurate. It was in these instances especially that reactions to response delays appeared to be the most severe.

Despite the fact that people cannot be available to respond every minute of the day, they are generally expected to respond as soon as they are available. People who don't conform to this norm of mutual availability and reciprocal responsiveness risk being labeled as deviant from the norm, such as by words like "lazy" or "flaky".

Relationships or feelings of connectedness with others appear to be subject to more lasting negative effects on the relationship when there are serial response time violations in weaker relationships; conversely, though close relationships may suffer consequences in the individual events of response delays, this study did not observe major, negative impacts of response delays on relationships between communication partners that are indicative of a lasting lack or loss of connectedness.

Mobile text messaging is a semi-synchronous channel where the expectations skew toward synchronous, and where non-response has myriad consequences. Yet, in the wake of severe evaluations of response delays, participants resent the pressure they themselves feel to respond, sometimes viewing disconnecting from devices as a healthy or strong behavior. Emerging adults often employ strategies to relieve themselves of feeling constantly called upon to respond (a form of "techno-resistance"; Ames, 2013), even though they may judge others harshly for their silence or infer things that reflect negatively on themselves in the face of others' silence.

# APPENDICES

APPENDIX A: Consent Form

**Consent to Participate in our Study**
Thank you for your interest in this research study. This study consists of a short online questionnaire and an in-person interview. After reviewing the consent form below, please select “I agree” below if you would like to participate. You must be at least 18 years old to be eligible.

**What is the purpose of this study?**
You are being asked to take part in a scientific research study conducted by Dr. Shelia Cotten and a doctoral candidate researcher at Michigan State University. You are being asked to participate because you are an adult resident of the greater Lansing area. The purpose of this study is to better understand how individuals use technology (such as mobile phones and email) to communicate with one another.

**What will I do if I choose to be in this study?**
You will complete a brief online survey, which will take about 5 minutes, to provide some basic information about yourself as well as to indicate optimal times to participate in an interview. After you complete the online survey, a researcher will contact you to schedule an interview. With your permission, the interview session will be audio-recorded.

**What are my rights as a participant in this study?**
You have the right to stop participating at any time. You have the right to ask questions about the purposes and procedures of this research; however, a full explanation will be deferred until after you've completed the interview to avoid influencing the results. You may request that any information you give be ignored, and that any or all data from your survey be destroyed. You may refuse to answer any question without penalty. What are the risks and benefits of participating? There are no obvious physical, legal, or economic risks associated with participating in this study beyond the risks associated with everyday Internet use. Although you may not receive direct benefit, others may ultimately benefit from the knowledge obtained through this research.

**How will I be compensated?**
You will receive payment of $20 cash at the completion of the interview.

**What about the confidentiality and privacy of my information?**
Participation in this study may result in a loss of privacy, since persons other than the investigator(s) might view your study records. Your privacy will be protected to the maximum extent allowable by law. No personally identifiable information will be reported in any research product. Moreover, only trained research staff will have access to your responses. Within these restrictions, results of this study will be made available to you upon request. The Michigan State University Institutional Review Board has the authority to review your study records. They are required to maintain confidentiality regarding your identity. Results of this study may be used for teaching, research, publications, or presentations at professional or scientific meetings. No personal

information about you will be used. If your individual results are discussed, your identity will be protected by a using an alias rather than your name or identifying information.

**Whom should I contact if I have questions or concerns about this research study?**

If you have questions about this study you may call Dr. Shelia Cotten, the primary investigator of this research study, at telephone number (517) 432-8002, via mail at 404 Wilson Road, Room 404, East Lansing, MI, 48824, or by email at cotten@msu.edu. If you have any questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, Michigan State University's Human Research Protection Program at telephone number (517) 355-2180, Fax (517) 432-4503, email irb@msu.edu or regular mail at 207 Olds Hall, MSU, East Lansing, MI 48824.

By clicking "I agree" below, I give my consent for the researcher to audio-record my interview session.

❍ I agree
❍ I do not agree

I have read the information given above. I understand that my participation is completely voluntary, and that I may terminate my participation at any time. By clicking "I agree" below I give my written consent to participating in this study.

❍ I agree
❍ I do not agree

APPENDIX B: Interview Protocol

**Interview Guide**

*This is an initial outline for a semi-structured interview. Main questions intended as launch points for conversation designed to elicit relevant information and anecdotes related to response time expectations, instances of response delays from communication partners, and reactions to these delays.*

**Intro**

I am interested in better understanding individuals' uses of mobile phones and the role they play in our relationships, so first, I'd like to ask you a few questions about your day-to-day life and mobile phone use, and then we'll talk a little bit about how you use mobile devices in your relationships.

1. Tell me a little bit about your mobile phone use throughout the day.
    a. What are the main kinds of activities you use your phone for?
    b. How would you describe your "relationship" to your phone?
    c. Where do you usually keep your mobile phone throughout the day?
        i. Do you ever turn it off? In what instances?
        ii. Have you ever forgotten to take a mobile device with you or had it die while you were away from a charger?
            1. What happened?
            2. How did you feel?
            3. What did you do?
2. How frequently do you check your phone or other devices for new messages?
    a. How are you notified about incoming messages or calls? (Sound on, silent)
3. How would you compare your phone use to others'?
    a. Do you feel as though you use it more or less than others? The same?
    b. How do you know this?
    c. Do you feel like you check for incoming messages more or less than average when comparing yourself with others?
    d. Compared to the average person?
    e. Compared to your friends?
4. How do you use your phone to communicate with others?

a. Are there times throughout the day that you spend more time communicating with others using your phone than others? How so?

5. Can you give me a sense of how quickly you usually respond to incoming messages on your phone?
    a. To calls?
    b. Are there times when you don't respond like this? (This quickly?) Can you give me an example?
    c. What things in your life affect how quickly you respond to texts? Can you give me an example?
    d. How do you think your response times and availability to answer messages compares to others?
    e. How generally available are others to respond to your messages?
    f. Do you think availability to answer messages is important? Do you think how quickly people respond to text messages is important?
        i. How so? In what ways? Why?

6. With whom do you stay the most closely connected on your mobile phone? Who are the people with whom you coordinate the most on a day-to-day basis?
    [*Make notes of main people indicated, and go through questions for named contacts one at a time*]
        i. How do you know him/her? What is the nature of your relationship?
            1. How long have you known one another?
            2. How close are you?
            3. How do you predominately communicate?
            4. How often do you communicate?
            5. What is the nature of what you typically communicate about? (Work, family, coordination, etc.)
    b. How would you describe their technology/phone use, if you could?
        i. Do you know if they have their phone with them at all times or are always near a device they can use to communicate?
    c. To what extent do you communicate with <NAME> while you are at work?

        i. How do you communicate with them while you are at work?
    d. Can <NAME> communicate with you while *he or she* is at work?
    e. Do you have a sense of when this individual is and is not available?
        i. What are the typical windows of time during which you communicate more? Less?
    f. How would you describe <NAME>'s responsiveness to the messages you send him/her?
        i. How easy is it for you to get in touch with this person?
        ii. How long do you usually wait before you hear back from <NAME>?
        iii. To text messages? Facebook messages? Phone calls?
    g. Do you consider <NAME> to be adequately responsive? Not responsive enough?
        i. Why? How so?

7. Can you think of any times when trying to communicate with this person over technology made things difficult for you? How so? What happened?

8. Are you able to recall any instances when you were trying to get in touch with this person and were unable to?
    a. What happened?
        i. What was the situation?
        ii. How did you try to contact them?
    b. What did you think was keeping them from responding?
    c. How did you feel when you couldn't reach them?
    d. How did you react to this situation?
    e. Did you confront the individual about this experience?
        i. How?
        ii. What did you say?
        iii. How was it received?
    f. How did this event impact your relationship?
        i. What did you learn from this experience?
    g. Do you expect something like this to happen again?

9. In the event that you really wanted to reach <NAME>, what would you do?
    a. For what reasons would you choose to do things this way?
    b. Have you ever been in an emergency situation in which you needed to reach someone but couldn't?
        i. What happened?
        ii. What did you do?
10. Is there anything else you would like to tell me about your mobile communication with others that I didn't ask?

APPENDIX C

Table 3: Table of Codes

| Theme / concept | Code | Description | Example |
|---|---|---|---|
| Attachment to mobile device | ATT | Discussion of how one extensively relies on, checks, and keeps close proximity to his or her mobile device. | “I have it on me all times. I kinda feel naked without it” |
| Perceptions of availability (self) | SA | Referring to one’s own availability to respond via mobile phone | “But if I’m hanging out with my friends and we’re not doing anything, we’re all on our phones. We’re all with each other and we’re still on our phones.” |
| Responsiveness to incoming messages (self) | SR | Referring to one’s own responsiveness, response time, or propensity to delay responding to others’ incoming messages | “If you have nothing to distract you from sending a message or replying to a friend or something, you have to. I believe so.” |
| Choice in responsiveness | CHOICE | Refers to instances wherein it’s acknowledged that individuals have a choice about whether or not to respond to incoming messages. | “I think everyone has their priorities. You're never too busy to text back, but sometimes you say you are.” |
| Communication context | CONTEXT | Environmental factors impacting whether another person is available to respond to incoming messages. | “Like I said, I don't take it to the gym, and I'm not one of those people... I'm not always constantly on it.” |

Table 3: (cont'd)

| | | | |
|---|---|---|---|
| Message content | CONTENT | When the content of a message impacts the motivation to respond | "If somebody asked me if I wanna go do something, and I'm not sure if I really wanna go do that, or if I know I can do this other thing, later on. Or I know I have to do this thing later on, but I wanna still do that thing and see if I can work out a way to do 'em both." |
| Communication Partner | CP | Motivations or reasons for more or less responsiveness are attributed to the relationship with the specific communication partner | "She texts a lot. Sometimes…I have to ignore her sometimes. She's one of the people that texts me so much that if I have tasks to do, I have to say, like, "No, I'm just not gonna answer", 'cause this could keep going for a long time." |
| Communication accommodation | CA | References made to trying to mirror or match the responsiveness of the communication partner. | "If [my boyfriend] doesn't respond right away, I don't reply to him right away… he's not a very good texter." |
| Perceived availability (others) | OA | Relating to the perceptions of others' availability to respond to incoming messages. | "She's a basketball coach, I know, in the morning. She may respond back quicker when she first gets there, but then there'll be like this whole span of time where she just doesn't answer. I assume she's at a practice or something." |

Table 3: (cont'd)

| | | | |
|---|---|---|---|
| Prior communication experience | PCE | References made to prior instances communicating with specific communication partners. | ""But Lee – Lee is the worst! He's so bad at [responding]." |
| Interpretation of delays | INT | Instances in which individuals discuss their perceptions and sense-making of expectancy-violating response delays. | "Sometimes she gets back to me but it's weird because she doesn't like it when her boyfriend responds to people's texts messages really fast when they're doing together. But she won't answer anyone's texts if she's with her boyfriend." |
| Violated expectations | VE | Instances in which interviewees discuss how a communication partner's responsiveness did not match their expectations | "There was one time when she was at her cottage, and I didn't know that. And so, she didn't respond all weekend. So I was like, "Oh, that's kind of weird." 'Cause she usually responds pretty fast." |
| Emotional reactions | EMO | Expressions of emotional reactions to response time expectancy violations | "If it's a guy that I'm talking to, then I get like really nervous. I'll send something, and then you wait for it and you wait for it, and then I get really anxious. I get nervous." |
| Confrontations | CONFRONT | Instances where individuals discuss how they specifically confront their communication partners about instances of response delays. | "I've definitely confronted and told him like, 'I don't understand why you don't even text me all throughout the night.'" |

Table 3: (cont'd)

| | | | |
|---|---|---|---|
| Compensation behaviors | CB | References to additional actions individuals would take to try to elicit responses to their text messages. | "If we're making plans for that night to do something, he's really hard to get a hold of, especially as the night goes on, so you have to constantly keep texting him." |

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