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Cell Phones, College Students, and Conversations: Exploring Mobile Technology Use During Face-to-Face Interactions

Matthew Kenny
Abstract

It is important to understand how technology use affects real world interactions because technology is encroaching into every aspect of day-to-day life. There is a lack of understanding about how mobile technology influences face-to-face interactions, and this thesis explores this phenomenon through the qualitative analysis of data collected from focus group studies conducted with college students at a southeastern university. Contributing to media multiplexity and media niche theory, this study found that using mobile technology benefits F2F interactions by enhancing conversations and serving as a bonding tool between people interacting. We found that mobile technology use is disadvantageous for F2F interactions because it can be distracting, disrespectful, and lead to avoidance. Finally, we found that the factors that determine whether the use of mobile technology during a F2F interaction is appropriate are the context of the interaction and the type of relationship between the people who are interacting. These findings contribute to the previous literature that states the effects of technology should be viewed holistically, rather than taking a technologically deterministic position, whether it be a utopian or dystopian view of technology.
The members of the Defense Committee approve the thesis of Matthew Kenny defended on April 28\textsuperscript{th}, 2016.

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Introduction

The emergence of digital technology in everyday life is evident with the proliferation in ways mobile technologies can connect to online resources such as mobile banking, breaking news events, social networking sites, turn-by-turn navigation, and e-mail (Smith, 2015). This form of convenient, constant communication is especially prevalent in the daily lives of college students in the form of perpetual linkage (Dimmick et al., 2007). According to the Pew Research Center, nearly 100 percent of college students – undergraduate and graduate – use the Internet and 95 percent of Americans between the ages of 12 and 29 are online (Smith, Rainie, & Zickuhr, 2011). More than 97 percent of 18-29-year-olds use the Internet via a mobile device (Smith, 2015). Furthermore, 90 percent of college students use social networking sites (Smith & Caruso, 2010), and the average college student spends 95 minutes per day on social media networks (Roberts, Yaya & Manolis, 2014). Although online platforms – such as Facebook – can serve as a medium to develop and maintain relationships (Grieve & Indian, 2013), internet overuse can diminish face-to-face communication (F2F) skills as the Internet can replace the need to socialize with others (Li, O’Brien, Synder, & Howard, 2015).

Considering the widespread use of mobile technologies among youth, this study explores how college students use mobile technology during F2F interactions. This research is important because it sheds light on the new ways people communicate with one another in an ever-changing world that is abundant with emerging technology. Additionally, understanding how college students interact with one another via, and despite, technologies furthers our understanding of interpersonal communication and F2F
interactions in this digital era. Media multiplexity theory suggests that people in strong-tie relationships use more forms of media than people with weak-tie relationships. Although previous studies have not incorporated media multiplexity theory to study F2F interactions, this study aims to extend the theory by exploring how college students use mobile technology to enhance their interactions. Media niche theory claims that users will choose media types to satisfy their needs, and that users will make a decision on what type of media to use depending on the gratifications that the media serves. If two media types serve the same user gratifications, then the media type that better satisfies the user’s needs will be chosen. This study aims to extend media niche theory by viewing mobile technology as a media type that either competes with, or complements, F2F interactions.

Based upon focus groups conducted with college students at a southeastern university, we aim to explore how youth believe the use of digital technology impacts their F2F interactions. Specifically, this research seeks to explore the advantages and disadvantages of using mobile technology during F2F interactions, as well as the factors that help determine when using mobile technologies during F2F interactions is appropriate. The findings of this study provide a nuanced understanding of how college students use mobile technology during F2F interactions. Ultimately, this thesis suggests that mobile technology both helps and hinders F2F communication, and that technology’s effects on F2F interactions should be viewed holistically rather than deterministically with technology use characterized as either positive or negative in its effects.

This thesis is organized according to the following: Section One summarizes the extant literature related to college students’ technology use and effects on their online and
offline social interactions. Section Two explains the methods used to collect and analyze the data. Section Three presents the findings and analysis of the focus group discussions. Section Four offers conclusions, including how mobile technology benefits F2F interactions by enhancing conversations and serving as a bonding tool between people interacting with each other; how mobile technology is disadvantageous for F2F interactions because it is disrespectful, distracting, and allows people to avoid others which can result in fewer F2F interactions. Also, Section Four offers conclusions about how the context of the interaction, and the type of relationship, are both factors that determine whether the use of mobile technology is appropriate during a F2F interaction.
Literature Review

Face-to-face and mediated communication

Research comparing F2F communication to mediated communication began before the arrival of mobile communication technologies such as e-mail, instant messaging (IM), and text-messaging. Williams (1977) conducted a meta-analysis of studies comparing F2F and computer mediated communication (CMC) and found commonalities between different studies. For example, the author found that cooperative tasks such as problem solving, information transmission, and generating ideas are not affected by voice-mediated communication (i.e. telephone). However, voice-mediated communication resulted in more breakdowns in negotiation (i.e. failure to reach an agreement) compared to F2F communication. Williams (1977) also found that F2F communication was preferred for meeting strangers compared to telecommunicated conversations, suggesting that the presence of nonverbal cues leads to better first impressions.

For the purpose of this study, it is important to understand both the positive and negative perceptions of computer-mediated communication and mediated technologies with regards to F2F interactions. In an earlier study, Kiesler, Siegel, & McGuire (1984) conducted experiments with three-person groups who were asked to solve different problems using different forms of communication (i.e. face-to-face, anonymous CMC, and non-anonymous CMC). They found that the CMC groups took longer to reach consensus than F2F groups, and that members of CMC groups were more uninhibited (i.e. swearing, insults, hostile comments, name calling) than members of F2F groups (Kiesler et al., 1984). The authors concluded that a lack of non-verbal cues when
communicating through mediated technologies lead to misunderstandings because group members did not know how the others felt about decisions. They also found that a lack of social norms in electronic meetings caused group members to believe that impulsive and rude behavior was more acceptable compared to F2F meetings (Keisler et al., 1984).

Further studies also have used experiments to explore how human behavior during electronic group meetings is different from human behavior during F2F meetings (Sproull & Kiesler, 1991). For example, Sproull and Kiesler (1991) found that more people engaged with conversations during electronic meetings because they did not have to take turns talking: multiple people could simultaneously send messages to “talk” during electronic group meetings. The researchers also found that individuals dominated conversations less, thus creating more equality of participation between the participants during electronic meetings compared to F2F meetings, as status and prestige determined who talked more during F2F meetings (i.e. managers talk more than subordinates; men talk more than women). Although electronic meetings allowed more communication to occur between participants, group members also engaged in more arguments and flaming (rude and impulsive behavior) compared to F2F meetings. The authors suggested that CMC allows people to show more emotions, including anger and disrespect, compared to F2F conversations, and because participants had difficulty gauging their other group members’ reactions, conflicts emerged as a result of disagreements, making it harder to reach a group consensus when making a decision. Finally, the authors concluded that electronic meetings are good when group members are geographically dispersed, and for having meetings where more participants contribute to group decisions rather than having a group that is dominated by a superior of higher-status. However, the authors
emphasized that F2F meetings are more desirable when groups need to have complex
discussions that require intricate conversations because it is easier for participants to
gauge how others feel about decisions during F2F meetings compared to electronic
meetings.

Their findings are in line with other studies that have found CMC to be low in
social presence, which describes how aware and attentive a person is when interacting
with somebody else, compared to F2F communication, because of the lack of nonverbal
cues, which leads to more impersonal messages (Culnan & Markus, 1987). Later studies
found that internet use reduces interpersonal interaction and communication, thus
isolating individuals from others in the physical world (Nie, 2001; Stoll, 1995). Similarly,
internet use can detract from F2F interactions because people pay less attention to their
physical surroundings when they are engaged with technology (Wellman et al., 2001).

Although there are negative impacts of CMC, previous studies have also found
that CMC allows users to bypass geographic limitations when communicating with others
(Walther, 1996), which allows for people to communicate and interact regardless of
where they are physically located. The speed and efficiency of CMC allows users to
communicate with multiple people asynchronously (Sproull & Kiesler, 1991; Finholt &
Sproull, 1990). Asynchronous communication does not require each party to be available
simultaneously, which allows the users to communicate with people living in different
geographic locations and time zones (Wellman et al., 2001; Baym, 1997). However, as
Lea and Spears (1991) stated, it is important to recognize the disparity between the
advantages and disadvantages of CMC:
... there is a potential conflict between the characterization of CMC as a potentially fast and efficient means of communication on the one hand, and citing the relative inefficiency of the system as a cause of frustration and uninhibited behavior on the other... These two themes - the enhanced exchange and processing of information, and uninhibited and impulsive behavior - sit rather uneasily together. (p. 157)

Their concept fits well with this study and the idea that technology enhances, and detracts from, F2F communication – an idea that has continued to be researched as new technological advances emerge. In 2000, Jane Brown and Joanne Cantor held a meeting with researchers in New York to develop an agenda for researching the relationship between the youth and media. A top priority that was established during the meeting was to further explore the consequences of the youth’s constant connectedness to media (i.e. perpetual linkage).

*Perpetual linkage*

One of the most astounding technological advancements of the 21st century has been the emergence of the mobile phone. The mobilization of technology has allowed people to have constant access to social interactions through phone calls, text-messaging, e-mail, IM, and social media. Although mobile technology has provided people with constant access to efficient and easy communication with others, it is important to note the consequences this constant access has on people and their interactions in the physical world.

Katz and Aakhus (2001) coined the term *apparatgeist* to serve as a philosophic framework that encapsulates the changing perspectives and behaviors regarding the
presence of mobile technology in social settings. The emergence of mobile technology as an ever-present force in daily life has influenced modern interpersonal communication and F2F interactions. As Katz and Aakhus (2001, pp. 301-302) acknowledge, mobile technology is changing the landscape of human experience:

Whenever the mobile phone chirps, it alters the traditional nature of public space and the traditional dynamics of private relationships… Relationships between teens and parents are altered by the existence of the mobile phone. In social relationships among adults, mobile communication leads to different forms of coordination, cooperation, and conflict…How people socialize and behave in public spaces, including cafes and train stations, is modified and shaped by the presence of and response to the mobile.

One of the key aspects of apparatgeist is perpetual linkage. Perpetual linkage is a term used to highlight how mobile technology provides people with constant access to the internet and connection to other mobile users. This perpetual linkage, or constant access, to the internet through the use of mobile technology has both benefits and disadvantages which are displayed through competing desires from individuals. One consequence of perpetual linkage is that people may experience a fear-of-missing-out (FoMO) if they are not connected to the internet. FoMO is described as a “pervasive apprehension that others might be having rewarding experiences from which one is absent, FoMO is characterized by the desire to stay continually connected to what others are doing” (Pryzbylski et al., 2013). An example of perpetual linkage among college students is how they use social media to stay connected to their friends to avoid experiencing FoMO (Pryzbylski et al., 2013). In addition, Turkle (2011) acknowledged
how perpetual linkage is affecting the youth who are constantly exposed, and connected, to technology: “Today’s young people have a special vulnerability: although always connected, they feel deprived of attention” (p. 294).

On a day-to-day basis, the mobile phone allows individuals to coordinate plans with others they are not physically near, and communicate with people across distances who they normally would not talk to. Ling and Yttri (2001) conducted group interviews to examine how people use the mobile phone to communicate and plan interactions with others. People use mobile phones to micro-coordinate interactions by adjusting the time and location for meetings as needed. Ling and Yttri introduced the term hyper-coordination to express the various functions, beyond coordination, that mobile technology serves its users: “Hyper-coordination is not simply the use of the device to coordinate activities. It involves social and emotional interaction and includes strictures as to the type of terminal one should use and its proper uses” (p. 140). In other words, different social scenarios and types of mobile technology allow users to coordinate interactions with others and express emotion through personal messages delivered through CMC.

Although the mobile phone provides a multitude of functions and uses, the hyper-coordination that results between individuals does not always benefit relationships. For example, the constant use of mobile technology for relational maintenance can lead to overdependence, where a false sense of connectedness and availability is established between partners, which can lead to feelings of guilt when pressured to respond to messages (i.e. entrapment) (Hall & Baym, 2011). In other words, when people abuse mobile technology to communicate with others constantly, the sender of messages may
be crossing the recipient’s boundaries of how often they’d like to communicate. Vice-versa, the sender of messages may not be communicating as frequently as the recipient would prefer, which could also lead to resentment within a relationship. As Hall & Baym (2011) concluded, “Mobile media can lead to more connectedness, but as a consequence of favoring constant contact over autonomy, it can also lead to feelings of overdependence and entrapment” (p. 327). The theme of perpetual linkage has only magnified as mobile technology has become more integral to the lives of students as they communicate and interact with others via mobile technology.

*Mobile technology and college students*

The influx of mobile technology in the daily lives of college students has been a topic of interest in recent research studies. For example, Quan-Haase and Collins (2008) explored how mobile technology (specifically IM) serves as a coordination tool, provides social accessibility (i.e. the ability to reach others), and facilitates contact with others across distance. The authors found that students “feel compelled to be available via IM as often as possible because IM provides them with an easy way to simultaneously connect to a large and diverse social network of friends and family” (Quan-Haase & Collins, 2008, p. 538). They also found that students use IM whenever they are online: students use IM to connect with friends when they have downtime, and they are drawn to IM because they are able to multitask easily and accomplish other tasks while communicating through IM. However, students also noted that they felt overwhelmed when receiving a large number of communication requests when signed on to their IM accounts. In response to these feelings of being overwhelmed, students developed strategies to negotiate their social accessibility, such as limiting the amount of time spent
logged on to IM, controlling the size of their contact lists, and using statuses (i.e. “busy” or “away”) to display their availability (Quan-Haase & Collins, 2008).

A systematic review of research studies conducted between 2003 and 2013 found both beneficial and harmful effects of using online communication technologies for young adults (Best et al., 2014). The authors found that the benefits of using online communication technologies included increased self-esteem, increased social capital, and increased opportunity for self-disclosure. However, the authors also found that the harmful effects of using online communication technologies included social isolation, depression, and cyber-bullying (Best et al., 2014).

Previous research studies have also explored both the positive and negative consequences that technology-based communication has on interpersonal relationships among college students. For example, Murray and Campbell (2015) used an electronic survey to collect qualitative data from college students to understand how technology both positively and negatively impacts intimate relationships. They found numerous benefits that technology-based communication can bring to a relationship, including increased communication while partners are physically separated. Participants said they use technology-based communication to make future plans together, to learn more information about each other while they are not physically together, to express intimacy and affection, and to provide new topics of discussion by sharing news and information (Murray & Campbell, 2015). Similarly, previous studies have found that technology-based communication can facilitate connections between friends, family, and community members while they are not physically together (Murray & Campbell, 2015; Li & colleagues, 2015). Grieve and Indian (2013) found that social networking sites – such as
Facebook – facilitate social connections for people who find it difficult to communicate through F2F interactions. These connections help to develop close relationships through easier, more efficient, and faster communication (Pettegrew & Day, 2015).

Although there are numerous benefits that technology-based communication provides for relationships, past studies have also identified the negative consequences that technology-based communication has on relationships. For example, Murray and Campbell (2015) found that the potential for misunderstandings and inauthentic conversations increases when intimate partners communicate using technology. They also found that technology use can distract intimate partners from their interactions with one another in the physical world. This distraction causes partners to feel neglected when their significant other is using technology. Participants in this study also noted how they may become irritated by their partner’s use of technology while interacting together.

Similarly, Li and colleagues (2015) found that when technology is overused, it can cause social isolation which reduces the quantity and quality of F2F interactions. Whereas the aforementioned consequences of technology use focused primarily on technology-based communication, this thesis focuses specifically on F2F interactions when the use of technology is present. Thus, based on the preceding literature stating both the positive and negative effects of technology use on relationships and communication, this study proposes the following research questions: (RQ1a) what are the advantages of using mobile technology during F2F interactions; (RQ1b) what are the disadvantages of using mobile technology during F2F interactions; (RQ2) what factors determine the appropriateness of using mobile technology during F2F interactions?
User gratifications and niche theory

The concept of uses and gratifications allows researchers to study media choice (Dimmick, 2003). According to Katz, Blumler, and Gurevitch (1974), gratification studies “are concerned with the social and psychological origins of needs, which generate expectations of the mass media or other sources, which lead to differential patterns of media exposure (or engagement in other activities) resulting in need gratification and other consequences, perhaps unintended ones” (p. 20). In other words, users select a particular media type based on its ability to fulfill the user’s needs or provide gratification opportunities (the possibility of satisfying user needs).

Some types of media are unable to satisfy user needs because they are limited by the dimensions of space and time. For example, a traditional television set is limited to where it is plugged in, and radio is limited to fulfilling user needs in real-time for a specified location. However, the use of “cellular phones multiples the number of time-space opportunities for communication…new media may supply a greater number of gratification opportunities” (Dimmick, 2003, p. 31-32). For example, mobile phones allow users to listen to music, watch videos, and communicate with personal networks regardless of time-space limitations. This proliferation of user gratifications that mobile phones are capable of fulfilling at any given moment, in any location, makes the mobile phone a popular media device. As Dimmick (2003) states, “A medium that offers more of a given type of content or interaction at a greater number of times offers audiences in a particular time-space location a higher probability of obtaining the gratifications they seek” (p. 32). Consequently, when users choose to interact with mobile technology in attempts to satisfy their needs, they are choosing not to use other types of media.
Media niche theory (Dimmick, 2000) claims that differing media types either compete with or compliment each other when they are used to satisfy user gratifications. The likelihood of an individual choosing one media type over another to satisfy particular needs is determined by understanding the niche breadth, overlap, and competitive superiority of the various communication technologies that are available to the user.

*Niche breadth* is described as the gratifications obtained, and gratification opportunities, that the media type provides; *niche overlap* refers to how different media types serve similar uses and gratifications or provide similar gratification opportunities; *competitive superiority* denotes how a media type better satisfies user gratifications, or provides more gratification opportunities, than another media type (Dimmick, 2003; Feaster, 2009; Dimmick et al., 2011). When there is a high overlap between different media types, the superior media technology that satisfies user gratifications better will displace the inferior media type, unless the different media types satisfy different gratifications, in which case they would not overlap nor compete. This thesis attempts to utilize niche theory to explore how the choice to use mobile technology to satisfy user gratifications affects F2F interactions. In this context, the use of mobile technology either compliments or displaces F2F interactions when competing for limited user resources (e.g. time, attention) in a shared environment.

The theory of the niche originated to understand how organisms in ecology compete for limited resources in a shared environment. Dimmick and colleagues (2000) applied the theory of the niche to communication studies to understand how various forms of media compete and coexist with each other. As Dimmick (2003) stated, “Similarity in niches leads to strong competition, whereas niche differentiation leads to
coexistence” (p. 37). Thus, media types that occupy similar niches in a shared space are competing to satisfy the same gratifications sought by the user. For example, if a user receives a mobile notification during a F2F conversation, and the intrigue of that notification outweighs the intrigue of the F2F conversation, then the user could choose to check their cell phone. However, coexistence between media types occurs when the types of media occupy different niches by serving different user gratifications. For example, social networking sites and e-mail may both serve the user gratification of communicating with people across distance, however the publicity of a post through a social media site is different from sending a private e-mail. Dimmick and colleagues (2000) claimed that “by identifying media niches, we can determine the payoffs and tradeoffs associated with particular media in satisfying users’ needs” (p. 244).

Dimmick and colleagues (2000) explored how two forms of interactive media – the telephone and e-mail – are used for long-distance communication. They aimed to understand what gratifications each media type provided for users. To determine this, participants rated “how helpful” both the telephone and e-mail were in fulfilling sociability gratifications (i.e. sending/receiving personal messages, sharing ideas/opinions, give/receive advice on personal matters, keep in touch with people, keep in contact with people who live far away, pleasure of communication, feel/express caring), and providing gratification opportunities (i.e. fit peoples’ work schedules, simple/easy communication, quick communication, convenient communication, communication with people in different time zones, communication that is like F2F conversation). Participants were also asked whether they made more, less, or the same amount of long-distance phone calls since their adoption of e-mail. The researchers found
that users chose to use a telephone, rather than e-mail, to satisfy sociability gratifications (e.g. expressing emotions and affection, giving advice, exchanging information, providing companionship); whereas users chose to use e-mail instead of a telephone to communicate with others regardless of individual work schedules, living in different time zones, and other time constraints because of the medium’s ability to conduct asynchronous communication (Dimmick et al., 2000). According to media niche theory, these findings show that users chose a particular form of media (i.e., telephone), over another type of media (i.e., e-mail) to fulfill certain needs (i.e., sociability gratifications). In summation, media choice depended on what gratification users were seeking from the media. In some instances, users preferred the phone because of its ability to express affection and emotion, and in other situations, users preferred to communicate through e-mail because of the capability of transcending time constraints. Thus, rather than e-mail displacing the phone, or vice-versa, the study showed that the two coexist because they fill different gratification niches.

Building on the work of Dimmick et al. (2000), Ramirez and colleagues (2008) surveyed college students to identify how people use different interpersonal technologies (i.e., landline and cellular telephone, e-mail, and instant messaging) during a typical day and week to fulfill different needs. They also aimed to determine whether the use of IM for personal messages displaced the use of the telephone (landline and cellular) and e-mail. Participants reported that they made fewer long-distance calls on landlines, and used e-mail less often after adopting IM. However, participants also indicated a slight increase in cell-phone use after adopting IM. Their findings also showed that IM served more user needs (i.e. sociability/gratification opportunities) than the landline telephone.
and e-mail, but the cell phone served more user needs than any of the other three media types. Thus, the cell phone served the broadest spectrum of user needs, followed by IM, e-mail, and finally the landline telephone. The cell phone had the largest breadth of gratifications (i.e. the generalist) and could substitute the other types of media for most situations. However, users chose to use IM over other media types because of IM’s superiority over other types of media to “pass time” and have “communication that is different from F2F.” Consistent with the findings from Dimmick et al. (2000) e-mail was superior to other media types when communicating with people across different time zones. Prior research has found that users chose the telephone to communicate with people they are close with, and that e-mail and IM were used for communicating with people with whom the user wasn’t as close (Dimmick et al., 2007). The niche overlap between e-mail and IM stems from their ability to allow users to communicate across time-space limitations. The landline telephone did not rate superior to any other media type for any gratifications, suggesting that if given a choice, the landline telephone would be displaced by other media types.

Although media types compete with each another to serve similar user gratifications, they also coexist as they serve different gratifications, or serve similar gratifications in different ways. For example, Ledbetter (2009) found that differing media types do not necessarily have to compete with each other when satisfying the same user gratifications. Instead, differing media types can work together to satisfy similar gratifications in dissimilar ways. For example, social networking sites and e-mail may both serve the user gratification of communicating with people across distance, however the publicity of a post through a social media site is different from sending a private e-
mail. Although both media types serve the same user gratification of communicating across distance, they compliment each other by satisfying the user gratification in different ways (Ledbetter, 2009). Other studies also have found that new technologies complement existing forms of communication, rather than necessarily displacing them. Wellman et al. (2001) suggested that:

Internet use neither increases nor decreases other forms of communication. Neither the frequency of asynchronous nor synchronous Internet activities is associated with the frequency of other forms of contact…people still keep visiting and phoning, but they also e-mail. This suggests that Face-to-face and telephone contact provide unique ways of communicating for which the Internet cannot substitute.

Multimodal connectedness and media multiplexity

When people use multiple media types to compliment other types of media when communicating with others, they are exhibiting multimodal connectedness which describes how people use various modes of communication to maintain their relationships (Chan, 2014). As multimodal connectedness increases through the addition of new communication technologies to one’s personal communication system, frequency of communication increases, which further develops strong-tie relationships through increased intimacy and emotional support between individuals (Chan, 2014; Baym & Ledbetter, 2009). Multimodal connectedness supplements F2F interactions by providing additional avenues for relational maintenance through mediated technologies (Quan-Haase & Wellman, 2004; Stafford, Kline, & Dimmick, 1999; Baym, Zhang, & Lin,
In other words, the more modes of communication that people have access to, the more opportunities they have to maintain and develop their relationships.

Haythornthwaite (2005) suggested that people with strong-tie relationships use more media channels, or have higher levels of multimodal connectedness, than people with weak-tie relationships. Therefore, the stronger the tie between two individuals, the more modes of communication they will use. For example, individuals who communicate both F2F and through text-messaging reported higher levels of intimacy compared to relationships where they only communicate through F2F conversations (Igarashi, Takai, & Yoshida, 2005). Boase (2008) found that heavy communicators, or individuals who stay connected with their personal networks through a variety of media, have larger and more active personal networks compared to light communicators. For example, this is displayed when college students maintain relationships with close friends through the use of a variety of communication channels – including F2F, telephone, social networking sites, instant messaging, and blogs (Ledbetter, 2009). Although media multiplexity theory addresses how the use of multiple communication technologies influences relational maintenance, it does not account for the use of multiple communication channels during F2F conversations and its effects on both weak and strong ties. Thus, through the lens of both media multiplexity and media niche theory, this study examines how the coexistence of mobile technology and F2F communication influences interactions in the physical world.

According to media multiplexity theory, it can be assumed that mobile technology use enhances F2F interactions because people with strong-tie relationships use more forms of media to communicate. However, if the mobile technology is satisfying similar
gratifications as F2F communication, then, according to media niche theory, mobile technology could compete, and ultimately, displace, F2F communication. In addition, if the mobile technology aims to satisfy different gratifications from the F2F interaction, then the two communication means could complement each other in satisfying user needs. Through the use of focus groups and qualitative analysis, this thesis aims to contribute to both media multiplexity and the media niche theory by exploring scenarios when the use of mobile technology both enhances, and disrupts, F2F interactions.
Method

This qualitative study examining how college students use mobile technology during F2F interactions relied on focus groups to collect descriptive data from participants’ responses to open-ended discussion questions. According to Sousa (2014), “qualitative research seeks to provide rich, thorough descriptions and interpretations about the phenomena under study as they occur in their natural environment” (p. 211). Focus groups are advantageous for data collection because participants with similar interests converse with one another to provoke conversations about a particular phenomenon (Birks & Mills, 2011). However, “the downside of such group dynamics is that the articulation of group norms may silence individual voices of dissent” (Kitzinger, 1995). Thus, although there are limitations to using focus groups, the author determined this method the most effective means for obtaining a holistic understanding of college students’ use of mobile technology, as group processes “facilitate the expression of ideas and experiences that may be left underdeveloped in an interview” (Kitzinger, 1995). Further, as college students from the same university using mobile technology on a daily basis, participants were part of the same “interpretive community,” (Bohnsack, 2004), as evidenced by the fact that during discussions they responded to each other’s comments, feeding off what others said and demonstrating that they understood each other. The use of focus groups allowed the researcher to identify emerging themes and patterns underlying the different conversations, or the “collective meaning pattern” (Bohnsack, 2004, p. 217), in participants’ common discussions and interactions.

This study used framework analysis to identify themes from the data through a five-step process: 1) familiarization; 2) identifying a thematic framework; 3) indexing; 4)
charting; and 5) mapping an interpretation (Rabbie, 2004). After the focus group discussions were transcribed, the author read the transcriptions multiple times to become familiar with the data to allow themes to emerge. Once the themes were evident, relevant quotes were pulled and categorized to address each particular research question. Data are interpreted particular to this case, and therefore is not generalizable; however, the findings provide a nuanced understanding of how college students use mobile technology during F2F interactions.

Three one-hour focus groups were conducted at a southeastern university in February 2016 over the course of one week. The principle investigator served as the moderator for all focus group sessions while a co-moderator facilitated the first and second sessions. Each focus group was audio recorded and transcribed verbatim. Each session was also video recorded to confirm which participant was talking when answering questions. The names of each participant were changed from the original transcription to ensure confidentiality. The moderator asked open-ended questions (see Appendix A) to encourage further discussion and guide the conversations among participants. Participants were asked about their views on mobile technology use during F2F interactions, including: how the use of mobile technology assists F2F interactions; how the use of mobile technology interferes with F2F interactions; how they felt when somebody they were interacting with was distracted by mobile technology; how has mobile technology distracted them from F2F interactions; how have they used mobile technology to avoid interacting with somebody; how does their use of mobile technology change depending on who they are with, and why. Participants were encouraged to voice
their opinions and describe their experiences with mobile technology openly and freely with other members of the group.

Each focus group session consisted of five to nine undergraduate college students: five in the first group, nine in the second, and seven in the third. Participants were recruited from various undergraduate courses and were offered either course extra credit or a monetary incentive, in the form of $5 Starbucks giftcards, to participate in this study. In total, 21 undergraduate students from Florida State University — ranging from 19 to 22 years in age — participated. They completed a brief survey before the focus group session began to gather demographic data and basic information regarding their access to, and use of, digital technologies.

More women (86%; N = 18) than men (14%; N = 3) participated in the focus groups. Most respondents self-identified as White/Caucasian (62%; N=13), followed by Hispanic (24%; N = 5), and Black/African American (10%; N=2). Most students were seniors (57%; N=12), followed by juniors (24%; N= 5), and sophomores (19%; N=4). All of the participants reported having access to a smart phone with Internet access and a laptop on a daily basis; 38% (N=8) of participants reported having access to a tablet/iPad. All participants reported that they spend more than three hours per day using digital technology; 43% (N=9) use digital technology between 3 – 5 hours per day; 38% (N=8) use digital technology between 5 – 10 hours per day; 19% (N=4) use digital technology more than 10 hours per day.
Findings

**RQ1a: Advantages of using mobile technology during face-to-face (F2F) interactions**

When participants discussed how the use of mobile technology assists F2F interactions, two major themes emerged from the discussions: how mobile technology can enhance conversations by introducing new topics and information, and how the collaborative use of mobile technology can serve as a tool to bond people together during F2F interactions. Participants noted how they use mobile technology to access multimedia content and information found on the Internet to introduce new conversational topics, or to add to an already established conversation. In this sense, the use of mobile technology is advantageous because it provides access to a breadth of information, thus stimulating new conversations between people who are interacting in the physical world.

**Enhanced conversations**

The first theme to emerge related to RQ1a – the advantages of using mobile technology during F2F interactions – addressed how mobile technology enhances conversations through the introduction of new topics to discuss, or by providing access to new information to support an already established conversation.

**New conversational topics**

Participants noted how mobile technology provides them with access to information that can be used to introduce new topics of discussion. For example, Jack (FG3) said, “I just feel like any information that's available on the phone you can make a conversation out of it. I feel like that’s one of the ways it can enhance a face-to-face interaction.” Similarly, Sasha (FG1) said she and her friends introduce new
conversational topics through the concurrent use of mobile technology while interacting with each other.

Me and my friends, like I have three roommates, and we pretty much, every single day when everyone comes home, we all go to the living room and spend the rest of the night together. We do that every day and we invite our friends over and it'll be like 10 of us sitting there, just doing different things and like interacting and not interacting. If we're just like, oh, talking about this video game, and somebody pulls out their phone and they're talking while they're on Twitter that is fine… I'll be like, “Hey, look at this,” and that’s how we start the conversation. We talk about this post and then everyone is having this discussion and it gets really lively. Additionally, Simone (FG1) said that mobile technology contributes to conversations she has with her roommates: “I'll be on my phone and talk to them at the same time… I feel like you can make the phone part of the conversation too if you're trying to.” She later used the example of how she and her roommates talk about videos they watched together on the social media network Instagram. Emily (FG3) also noted how she used mobile technology to access social media while watching a television program with her roommate which added to their conversation:

I was talking to my roommate, and we'll be sitting on the couch. I'll say “Hey, did you see this thing on Twitter?” Or we'll be watching an awards show and somebody posted a video or a comment. So that will kind of be the catapult for another conversation that we might have.
Multimedia content

Multiple participants described how they used mobile technology to incorporate multimedia content – such as videos, pictures, or articles – into their conversations. For example, Mitchell (FG2) said,

I've had times where I'm just sitting with my friends and we'll look up YouTube videos of cool music videos. Like we want to see it. “Oh, this guy is crazy man.” Then we talk about it after but obviously there's silence with the music or whatever. It just assists it (the interaction) because you have something to talk about.

Cassidy (FG2) also said that mobile technology adds to conversations by “showing videos if you see something that’s funny, ‘Oh, look at this.’ Click on a video or a picture. Or if a mutual friend posts something on Facebook you can be like ‘oh, look what they said.'” Similarly, Heather (FG2) said that rather than attempting to describe a video she’d seen or a story she’d read, she uses her cell phone to show her friends the video or story. She said, “This happens to me a lot: I'm trying to summarize a story or video I saw and I can’t think of exactly how to describe it so I pull it up to show them or so they can read it so they can understand because I’m bad at explaining it.” Similarly, Jack (FG3) said that he uses mobile technology to find multimedia content to use as a conversational topic: “I find a funny video or article that I find interesting and I show my friends and it opens an entire conversation about something else.” Mobile technology allows people to continue a conversation by introducing new topics to discuss instead of sitting in silence. For example, Nicole (FG3) said, “I agree that it helps begin new conversation topics. Even if you're at lunch and waiting for your food. I feel like
eventually people run out of things to talk about, so when you pull out your phone and see a video or an article, or whatever, it definitely keeps the conversation flowing.”

Similarly, Kelsey (FG3) noted how the presence of mobile technology creates conversations during situations where the absence of mobile technology would otherwise result in a lack of conversational topics:

If the conversation starts to die down, there's always that person who is pulling out their phone and showing you some YouTube clip or something they saw on Tumblr. So I feel like it brings up new topics that otherwise, you're left to your surroundings. So like, if you're at the park and you guys lose the ball that you're playing with, what are you going to do? But nowadays, it's like, "Wait look at this;” as something we can go and do or something we can look at.

Donna (FG3) provided her own example of how her use of mobile technology created a conversation while interacting with her boyfriend:

I'm on my phone all day. I’m constantly sending my friend and my boyfriend links to an article I read or a video I watched, things like that, so when I get in front of them in person, it's like "oh did you see that link I sent you?" -- "yeah" -- and then we talk about it. Or he'll bring up something he saw that’s related to that so I think it makes the conversation a little bit richer.

Additionally, Jessica (FG2) discussed how a video game provided a topic of discussion between her, her classmates, and her professor:
There was this time when I had two classes with this same exact set of people and we all found out that we all really loved Pokémon. So we all just played Pokémon with each other, and eventually the teacher tried to incorporate Pokémon into Irish literature. It was like a conversation topic. We could talk about it and that would offshoot into something else and then we would start talking about normal things.

Learning information

The participants of each focus group also discussed how mobile technology could be utilized to learn information about the topic of an already established conversation. For example, Rebecca (FG2) and Donna (FG3) cited scenarios where they used mobile technology during F2F conversations to research a particular actor/actress. Rebecca (FG2) said, “I know when we're talking about movies and you can’t think of that one character from that one movie, I always pull up that IMDb (Internet Movie Database) app and pull up all the movie characters ever and be like, ‘Oh, it’s that person.’” Donna (FG3) added, “Maybe if you're watching TV or talking to somebody and you're like ‘Oh, who is that actress?’ You look them up to be more knowledgeable.”

Debating

Multiple participants cited the specific example of using mobile technology to learn more information while debating with their friends. Alexandra (FG2) said that “if you're having an argument with somebody about something dumb and you're like ‘well just Google it’ and they look it up and it kind of ends the argument.” Jack (FG3) said he also uses mobile technology to search for information that will end a debate: “I feel like if you're having an argument with someone and you just want to prove them wrong and
you're just like, ‘Okay, let me look it up so I can prove it to your face that you're wrong.’”

Similarly, Brooke (FG3) used mobile technology with her friends to search for information to facilitate a conversation about making future plans together: “When I'm just hanging out with my friends and we need a place to go, we'll look on Facebook to try and figure out what's going on next. Or like texting people, and then we'll figure out a place to go and we'll go together and it’s fun.”

In summation, a benefit to using mobile technology during F2F interactions is that it enhances the quality of conversations by providing either new topics to discuss, or new information that adds to an already established discussion. The incorporation of mobile technology into conversations between people interacting in the physical world provides richer and longer conversations through the introduction of new content to discuss.

**Bonding**

The second theme to emerge addressing RQ1a, that of people bonding together through their use of mobile technologies during F2F interactions, refers to the idea that mutual or collaborative engagement with mobile technology strengthens the relationship between people who are interacting with one another.

*Viewing/creating multimedia content*

Jason (FG1) discussed how memes – a viral image captioned with text – bond people together: “Memes are like the greatest thing that’s ever happened. You can make instant friends with someone if you find a really great meme that is really hilarious. I think that phones bring people together to some extent.” Sasha (FG1) added, “I feel like there is no bond deeper than bonding over a meme.” Similarly, Heather and Jennifer
(FG2) said they use mobile technology to bond with each other by creating videos on the social media platform Snapchat. Heather said,

We just make really funny things and show them to each other. We're right next to each other, both snapchatting each other, because we're trying to make funnier videos than the other person. It gives us something to laugh about. It’s bonding basically. We are making each other laugh and are having fun together.

Likewise, Sasha (FG1) described a situation when an unfamiliar classmate attempted to bond with her through the use of mobile technology:

I walked into class late and this girl let me sit next to her, and I was like "Hey, what’s your name?" She told me her name and I was like “Okay cool this is my name.” Okay we are kind of friends now. I know someone in this class. Throughout the entire class she was just showing me stuff that she found on the Internet. It was kind of annoying but I know that she was trying to connect with me. She was like, “Hey let’s be friends. Look at this funny thing I found on the Internet.” I was like, “Yeah that’s cool but we're in class,” but I feel like that is a very good example of the way people use that to… make friendships.

Collective documentation of a shared experience

Participants noted how the use of mobile technology also could create a bond between people who are stuck with others in an unfortunate situation. For example, Donna and Jack (FG3) talked about times when they were stuck in an elevator. Donna
recalled how people took photos with their cell phones and posted them to a social media platform to pass time while they were stuck:

We were all on our phones, taking pictures, "We're stuck in the elevator."

It was with my summer law program… Now that I think about it, we were really using our phones during the time we should have been panicking. I think the experience connected us… It was a big joke throughout the rest of the summer. Everybody bonded and talked about it. In that way it kind of connected us.

Likewise, Jack said that when he and a friend were trapped in an elevator they made a story on the social media platform Snapchat,

There was one time I was stuck in an elevator with maybe 8 people. We were stuck there for an hour and a half, and my one friend decided to pull his phone out and make a story on Snapchat. So I guess you can say he used mobile technology to make the situation more humorous or entertaining.

Achieving a common goal

Participants also discussed how using mobile technology to achieve a common goal resulted in a bonding experience for the individuals interacting with one another. The collective use of mobile technology bonds individuals as they work together to complete a task with the assistance of mobile technology. For example, Mitchell (FG2) noted how his juggling team searches for juggling videos during practice so they can learn new routines. Sarah (FG2) explained how she and her boyfriend watch recipe videos to learn how to cook meals together. Thus, mobile technology can be used as a
tool to bond people together during a F2F interaction through collaborative use. This use of mobile technology strengthens the relationship between people by enhancing the quality of their interaction with one another. Mobile technology can be used as a bonding tool to achieve a common goal, cope with experiencing unfortunate circumstances, and create multimedia content together.

In conclusion of RQ1a, the focus group discussions revealed multiple advantages of using mobile technology during F2F interactions. More specifically, participants said that the use of mobile technology enhances F2F conversations, and that the collaborative use of mobile technology serves as a tool to bond people together.

**RQ1b: What are the disadvantages of using mobile technology during face-to-face interactions?**

In addition to discussing how mobile technologies can be beneficial during F2F interactions, focus group participants also noted that the disadvantages couldn’t be ignored. For example, Jason (FG1) said, “if you have no other way to kick start a conversation you can really use a phone to kick start it, but you can also inversely use a phone to totally kill a conversation too.” Similarly, Charlie (FG3) said, “I feel like it has kind of made time feel rushed, because you don’t want to miss out, so you're missing out on in the moment and trying to be somewhere else. I get the positive part of it but I think ultimately it’s not a good thing.”

Participants discussed how the use of mobile technology during F2F interactions is distracting, disrespectful, and isolating. Many participants admitted to using mobile technology during F2F interactions while also acknowledging that it was rude to do so. The participants also noted how they felt disrespected when another person was using
mobile technology while interacting with them. Participants said they sometimes preface their use of mobile technology with a disclaimer to the person they are interacting with, or follow their use of mobile technology during a F2F interaction with an apology. Finally, participants noted how the use of mobile technology results in isolation from the on-goings of the physical world, thus diminishing the frequency of F2F interaction. However, participants noted that they purposely use mobile technology to avoid uncomfortable F2F interactions, thereby turning the disadvantageous aspect of isolation into an advantage.

**Distraction**

When exploring RQ1b, the first theme to emerge centered around how using mobile technology can distract people from F2F interactions. This is disadvantageous because participants suggested that the use of mobile technology results in a loss of attention and focus during a F2F interaction.

**Attention loss**

Participants noted how they pay less attention to F2F interactions when they use mobile technology. For example, Jack (FG3) said, “Sometimes I'll tune out and then not be paying attention to what somebody is saying so I'll have to ask ‘Oh, can you repeat that? I didn’t hear you the first time because I was too distracted by my phone.’” Additionally, Nicole (FG3) said,

I think it is really easy to tune out the people around you when you are on your phone or on your laptop. Or even in class sometimes when I'm trying to take notes on my laptop I'll open Facebook and just start scrolling.
Before I know it a good part of the lecture is over, so I feel like it’s not good.

Donna (FG3) offered an example of how her use of mobile technology distracts her while watching a movie with her mom:

I’m definitely the person who, I guess, creates the interference. Because I'll be with somebody, like when I go home to visit my mom for winter break, she likes to watch movies with me sometimes… when I'm watching a movie I'll be texting or scrolling through Snapchat or going through Instagram and she gets so frustrated with me like, "Pay attention to the movie!" So I think that is a time when it (mobile technology) has definitely interfered when I spend face-to-face time with somebody.

Donna added that this also happens when she watches TV with her boyfriend: “My boyfriend will watch TV and sometimes I'm on my phone. So sometimes I'll miss what happened in the show. We watch Shark Tank a lot. If somebody gets a good deal I'll be like ‘Wait, what happened? What deal did they get?’ I miss a lot of what's going on.”

Fear-of-missing-out (FoMO)

Participants suggested they feared missing out on what was going on in the virtual world if they were busy with interactions in the physical world. Kelsey (FG3) even admitted to feeling an urge to check her phone during the focus group discussion:

I feel like sometimes it’s a need. I know right now I put my phone in my back pocket because if I keep seeing it on this table I will open it and check it… It would look so bad, but I think we feel this need to check-in. I know that for me it definitely destroys some of my social interactions. I'm
sitting in a room of people and I feel this need, "I wonder if I got any texts or if anything is going on."

Not only is the use of mobile technology distracting, but the prospect of receiving a notification through mobile technology is distracting as well. Alexandra (FG2) said that receiving a text message on her cell phone, but being unable to check it, is distracting because the constant need to check the phone has become almost like an addiction, and receiving a notification that she is unable to check makes her feel anxious.

I feel like it’s just kind of like a habit and the feeling of there's information out there and you need to know it. If people are texting you, you need to know what it is. I know if I’m somewhere where I’m not supposed to be on my phone but I know someone had just texted me. I’m like "Oh my god, who texted me? What do they want?" You’re imagining all these scenarios and you know, if I just looked at the text all that would go away and I would probably be less distracted after I answered it.

Similarly, Sarah (FG2) said that anxiety sets in after she receives a message she can’t open in that moment: “Yeah, the anxiousness, and the wonder of what could it be. If you're at one percent you're like, ‘Ah, I have to wait for it to charge again.’ So the delay and then you won’t be able to respond until later. You can’t tell them anything because you can’t access the phone or anything.” The uneasiness that participants noted from not being able to check mobile notifications can be attributed to the concept that college students are perpetually linked to their mobile devices. Emily (FG3) said how mobile technology connects her to people who she isn’t physically with:
You kind of want to be connected at the same time. You're so focused on being at the moment you are in now but you want to be in so many places at once so you feel like you have to spread yourself. So being connected to your friends, your family, other people in other states and other areas because without it you may feel like you’re missing out on something.

*Group distraction*

In addition to mobile technology distracting one-on-one interactions, participants also discussed how mobile technology hinders group communication. For example, Brooke (FG3) said,

> Sometimes when you're with a bunch of people and you will all be looking at your phones. Also, we miss out a lot, because there will be times when we'll, well I'll be on my phone, and I'll be like "Okay, I'm done with this," and look around and everyone is still on their phones. You’re just kind of waiting, and like "Okay, never mind." I’m sure a lot of people do that, but you probably just miss each other. People are like "maybe we should stop this" but then it just comes all back around and you're just back in the cycle.

Similarly, Jason (FG1) said that when going out to the local bar “you just see a line of people… on their phones. Completely and totally disengaged.” Likewise, Jack (FG3) added, “Sometimes I'll see groups of people and they are all on their phones at the same time and they are just standing around in a circle.” He then poses the question, “Why are you guys with each other if you're not going to talk, or what are you guys there for?”
Later, he used a personal example of taking a road trip with a car full of people who were not speaking because they were distracted by mobile technology:

So it was all of us in the car. It was five or six of us. Then maybe after an hour, everyone started going on their phones. I realized, “C'mon, there's six of us. We have a seven hour drive and we can’t really talk about anything right now, not one thing?” That annoyed me a little bit. Especially with that many people in one place.

*Interacting with somebody distracted by mobile technology*

Participants expressed how they feel when trying to interact with somebody who was distracted by mobile technology. Participants noted how they felt awkward or uncomfortable during these interactions. For example, Jack (FG3) said, “It makes me a little uncomfortable because I'll try to start a conversation and get everybody off their phone but sometimes it doesn’t work.” Likewise, Heather (FG2) said she feels awkward when attempting to interact with young girl who is distracted by mobile technology.

I just started babysitting this girl and we're still trying to connect with each other so we have stuff to talk about. I'll say something to her and she just doesn’t respond because she is on her phone doing something. So it's really awkward sometimes.

It is also important to note how participants expressed feelings of unimportance and insignificance when interacting with somebody who is distracted by mobile technology. For example, Jason (FG1) discussed how he felt after repeating something important to his girlfriend because she was distracted by mobile technology. He said, “If it’s something that is that serious, you almost want to repeat it because it’s so important, but
at the same time it still feels futile. It really all depends on the context of the conversation and it makes you feel really helpless.” Similarly, Rebecca (FG2) discussed how she feels when trying to interact with customers who are distracted by mobile technology:

As I’m cashiering at Publix people will come through my line and they'll be on their phone. It's super awkward because we are supposed to talk to them, but if you say anything to them they'll just be really wrapped into texting. So they'll have to put their phone down and be like "Oh sorry, what were you saying?” The interaction is not as good as it should be. It's not person-to-person. It's more like person-with-a-phone-to-person… It makes me feel kind of terrible. Like I’m not really worth their time.

Likewise, Cassidy (FG2) said she feels left out when she’s around other people who are using their phones:

If you try to say something, a lot of times you don’t really get a response. Or you can tell they are doing other things and are uninterested. So you're just like “Okay, I tried, so I’m just going to sit here I guess and feel kind of lame.”

In summation, mobile technology distracts people from their F2F interactions with others. Participants discussed how they pay less attention to their F2F interactions while using mobile technology. They also noted how they feel when interacting with somebody who is distracted by mobile technology. These quotes illustrate how the use of mobile technology affects the user during a F2F interaction while also understanding how people feel when they are on the receiving end of a person using mobile technology during a F2F interaction.
Disrespectful

When one person is distracted by mobile technology during a F2F interaction, the other person feels devalued and disrespected. Many participants admitted to using mobile technology during F2F interactions although they said that it was rude to do so. To avoid disrespecting another person, some participants said they tell the person they are interacting with that they are going to use their mobile technology. Also, after realizing that their use of mobile technology is disrespectful, some participants said they follow-up with an apology. As some participants noted, the use of mobile technology during a F2F interaction is sometimes unavoidable because of obligations that are tied to their use of mobile technology.

Generally, participants said it was rude and disrespectful to text or check their cell phones during F2F interactions with friends. For example, Heather (FG2) said, "You can feel like you’re talking to somebody but if they’re on their phone, you don’t know if they’re really listening. So it’s kind of considered rude a lot.” Similarly, Simone (FG1) said,

I'll be in the middle of a story and if someone, like with my roommates, something that I’m excited to tell them about. If they pull it out and start looking they're, “Oh what were you saying?” I'll be like, “Oh, never mind, just do you. No, it’s fine.” It's just rude honestly. It's almost like I’m trying to tell you something that is actually important.

She later added,

My one roommate… doesn’t leave her phone ever. I’m just like, “Give me literally one minute to tell you something. Like I promise you, you don’t
have to be on your phone for one minute. Just let me tell you what I need
to tell you then carry on.” It's honestly kind of rude. It’s just there is a time
and a place for everything. Use your phone all you want. Do that, but it’s
like when someone is trying to tell you something, like we live together…
like I’m trying to tell you, you know? Do me the respect of putting your
phone down at least.

Additionally, Sasha (FG1) acknowledged how it was rude of her to use mobile
technology while out to dinner with her romantic partner:

I got into this fight with my girlfriend… during summer because we went
to this super fancy restaurant right on Miami beach… We're there and
literally I’m waiting for the food and I'm just on my phone in this fancy
restaurant and she's just like, "Hello? I'm here." I felt so bad. I didn’t
realize that I was doing that. So I feel that was a really special moment
that I totally obliterated with technology. So, it's just funny to me because
I never realize that I do that but now that I think about it, that was super
rude.

When Sasha was asked why she was on her phone, she said,

A lot of times if I’m just sitting in the restaurant and the other person
doesn’t start making conversation I have to look for something to do. Like
I can’t just be sitting there just looking around the room. It’s not fulfilling
enough for me so I pull out my phone. So I feel like a lot of people who do
that are in that same vein of thinking.
Using mobile technology despite negative consequences

Despite acknowledging that using mobile tech during a F2F conversation was rude, most participants said they still did so anyway. Alexandra (FG2) used mobile technology to address text messages to avoid being rude to the people who are trying to contact her via texting, but she realized that this is rude to the people she is interacting with in person.

If I hear my phone, like ding or whatever, I don’t want to be rude and not answer a text message because I'm usually pretty good at getting back to people. Or if it’s important at all I don’t want them waiting on me to answer but then it's like you're being rude to who you're with. So if I'm with my boyfriend or my sister, I'm like “hold on a minute.”

Monica (FG1) said she can’t get too mad at friends who use their cell phones while they’re with her, because she does the same thing: “Well I sometimes get frustrated when I’m trying to talk to somebody and they’re like on their phone, but at the same time I don’t really. Like I’ve been there too. So I’m just like indifferent about it really.” To avoid disrespecting whomever she is interacting with, Brooke (FG3) has a self-imposed rule of telling people what she is doing when using mobile technology around others:

One thing that I make a rule of is when I'm on my phone, when I have to resort to being on my phone, is to tell people what I'm doing. So it holds me accountable. "Hey I'm just checking this email because I have to" or "I saw this YouTube video" as I'm doing it.
Self-policing

To stay present and not be distracted during her interactions, Heather (FG2) also practices self-policing by deleting social media applications off her cell phone.

I recently deleted the FaceBook app. I have to keep Twitter because I use it for class. Instagram I can check it on my computer that way I can still be up to date, but I limit my time so it’s only when I can go on my computer. That helps me a lot because I go on my phone and there's not really anything to do and that helps me stay in the moment, actually talk to people, socialize in real life.

Similarly, Jason (FG1) said, “I’ve seen where people will just shut off their phones for the day...My mom does the same thing; she'll shut off her phone whenever she's done talking to people. She won’t use it.”

Apologizing

Participants noted that when they do use mobile technology during F2F interactions, they often apologize to the people they are with, again suggesting that they recognize that doing so is rude behavior. For example, Cassidy (FG2) said, “I feel bad. I try not to do it. Sometimes I do it unconsciously and then I will apologize because I feel bad.” When asked about a specific example when this occurred, she said,

Probably like a week or so ago I was just with a friend and we were talking. It wasn’t anything serious; I think we were just hanging out. It's like if I’m having a long conversation with someone I find myself more tempted to look through my phone. I don't know I guess it's a distraction thing. Like I need to be doing something. I just started scrolling and
realized what I was doing and was like "Oh, I’m so sorry" and then I put it away.

*Adhering to time-sensitive responsibilities*

There also are times, participants said, that even though it is rude, some things must be attended to right away via their phones. For instance, Mitchell (FG2), who is responsible for organizing meetings for a club on campus, said sometimes he must respond to time-sensitive messages while out to eat with friends before the club’s meeting.

I’m part of a club on campus and before some of our meetings some people are like "Where's this? Where's that? Are we doing this? Are we doing that?" So I’m out to eat with someone before the meeting and I'm getting all of this constant "Hey Mitchell, what are you doing?" You know all this stuff and I have to constantly reply back because it's time sensitive. However, he admitted to feeling embarrassed for using his cell phone during a F2F interaction and consequently apologized for doing so. He said,

Well I told them like "oh I’m sorry guys, something is going on." I feel embarrassed for sure. A little bit embarrassed but at the same time, not as bad, as if it was someone I know. I was out with some friends of mine. I had all this stuff going on, they get it, but if it was people I just met or someone that didn’t really understand then it would be a little bit more embarrassing. Like oh it’s rude, rude-ish. I guess it is a grey area of rude.
Although Jennifer (FG2) recognizes that her use of mobile technology around others is rude, she said she is required to use mobile technology to complete her work responsibilities.

It's rude. I feel like I'm, well not a victim, but I do it. I'm on my phone when other people are talking, but it’s hard for me because it’s part of my job. I manage social media. I have to stay up to date to perform my job.

In summation, participants said they feel disrespected when the person they are interacting with chooses to use mobile technology. Although participants acknowledged that their use of mobile technology during F2F interactions was rude, they chose to use it anyways. However, some participants justified their use of mobile technology, citing that their use was necessary to complete tasks that were unavoidable.

**Avoidance**

Avoidance was the third theme to emerge when addressing the disadvantages of using mobile technology during F2F interactions. This refers to the way participants purposefully use mobile technology to avoid F2F interactions. They noted that using mobile technology prevents them from having to interact with people if they don’t want to. Even though participants recognized the advantages of being able to use their cell phones to avoid unwanted interactions, they still spoke of this as a disadvantage. For example, Jason (FG1) discussed how the phenomenon of using mobile technology to avoid interacting with people in the physical world is a product of the progression of society:

We're like kind of in our own bubble, so to speak. When you're sitting in class during syllabus week for example, you want to start a small conversation with
someone or get to know people...and it’s just kind of like awkward to break through that technology barrier that exists when it’s just like "Oh this person is on their phone. Oh that person is on their phone." I feel like even when walking around day-to-day. Not like I start conversations with people in elevators, but like if you're in the elevator with somebody and you just want to say "Oh, hey. How’s it going?" Or, "Did you see the game last night?," you really can’t because the whole time they are engrossed... You can’t really do much to stop it just because the way society is progressing. We are becoming more and more immersed and in tune. We want to know more about things that we want to know rather than what is going on around us, which isn't necessarily a bad thing but I feel like we are more in tune to specifics. We want to know what our friends are doing like on Snapchat. We want to know what is going on in the news rather than the person who is standing next to us that maybe wants to have a conversation...Honestly, I think it’s kind of disappointing because you can't really have like genuine conversations with people but at the same time you are also getting other stuff done that you want to do.

Waiting rooms

Giving weight to this idea of avoidance, just before the focus group session started, some participants were using their mobile technology instead of interacting with one another. Monica (FG1) said, “We were all just sitting here before this [focus group] started and we were just on our phones instead of trying to communicate.” Additionally, Jason (FG1) said, “We were all on our phones. It wasn’t a problem though because it’s a good default. That is our autopilot for the 21st century… We look on Snapchat and see
the new stories. We look… on our Facebook news feed and see what is happening. And it’s fine because we do it. We all do it. But we just kind of tune out for a second to see what’s going on.”

Similarly, Adriana (FG2) said,

In any public situation, if you're on the bus, or in a waiting room, you could talk to the people around you, but no one does. Everyone just pulls out their phone and they're just kind of in their own world instead of saying “hi” to a stranger or something like that… the waiting room affect. I could turn around and talk to my classmates but I don’t. I just choose to sit on my phone until class starts.

When asked why she uses mobile technology in this way, Adriana said,

We are not very outgoing and willing to make small talk with people. It's easier to pull out your phone then be like "Hi, I’m Adriana nice to meet you." Because you don’t want them to be like "Why is this girl talking to me? That's kind of weird." So you just pull out your phone and that's a perfectly legitimate excuse. No one is like "oh she's being rude or whatever" because you're not, you're just on your phone.

Participants also addressed why they use mobile technology to avoid F2F interactions.

For example, some Cassidy (FG2) said that the desire to avoid interacting with strangers is inherent to the current generation of students.

I think it is a very generational thing. Like I'll go places with my grandpa, like a waiting room, and he'll talk to everyone in that waiting room, and no one wants to talk because everyone is doing their own thing on their phone
but he tries to talk to people wherever we go because that’s how it was back in the day. More face-to-face interactions. It was more normal to make small conversations with people that you just passed.

Additionally, Jack (FG3) said that people use mobile technology when they feel uncomfortable, “If people get uncomfortable with an interaction, they can go straight to their phones so they don't have to deal with talking to people.” When Jason (FG1) was asked how he would react to walking into a room of people who were all using mobile technology, he said, “I would just be like okay. For a second you would think ‘Well this is awkward,’ but then you remove the awkwardness out of the situation by simply combining with everyone else... conforming with everybody else and then pulling out your phone until the next person comes in and then you repeat it.” Additionally, Simone (FG1) said, “I feel like if you walk into a room and everyone is on their phone it’s just kind of like ‘Okay, cool.’ I’m gonna sit down and be on my phone too.”

Social gatherings

For people who are somewhat shy, cell phones allow them to easily avoid people they feel uncomfortable with. For example, Sasha (FG1) said, “I love it. I’m so shy. I love when people are on their phones because I’m not very good at making small talk and I’m a very awkward person. So when everyone is on their phones I don’t have to make a fool of myself, which is always a plus.” Similarly, Kelsey (FG3) said that her girlfriend uses her cell phone to avoid interacting with other people while out at a party, which causes hesitance when people go to talk to her because they don't want to interrupt what she is doing on her cell phone.
I'm a pretty outgoing person, but my girlfriend really isn’t. So if we go to a party, sometimes I'll walk away, and when I turn around I'll realize that she has found a corner and pulled her phone out and isolated herself from the entire party. I'll send people over and be like, "Hey can you just go talk to her really quick? Just try and get her off her phone."… because she is very introverted and doesn't really make that step to go out of her personal comfort bubble. It's like "Oh my bubble, I'll create it." but to other people, "Oh, she doesn’t want to talk to you" so they wont go out of their way because its like, "She's doing something on her phone." They wont want to interrupt that so you just isolate yourself…what you do is you create this idea of people see you "Oh, she's on her phone though, so we won’t go interrupt that."

*Walking in public*

Mobile technology also allows people to avoid interacting with strangers, or friends, when out in public. For example, Emily (FG3) added on to Kelsey’s comment about using her phone at a party by describing how she also listens to music while walking on campus to avoid interacting with people:

That is what I do. If I'm at a party, and I’m with my best friend, and she's very outgoing with going to meet people, but if I'm uncomfortable, that is my default. I'll pick up my phone because I'm not just naturally going to go and introduce myself to people because its just not how I am…I'll find a corner and be like "okay I'm just going to be cool" not because I don’t want to talk to people but just because I get awkward or scared or
whatever. Or if I'm listening to music, nine-times-out-of-ten, I have my headphones on from the time I leave my apartment to when I step in the door in class. I feel like that prevents a lot of possible social interactions for me. Just like, "hey", talking to people on campus or just seeing what's going on. So when my headphones are on I pay attention to nothing else. That's kind of a bad habit because I do it all the time, so I should probably stop.

It’s important to note how Emily acknowledged this use of mobile technology impairs her from having F2F interactions with other people. Additionally, Jennifer (FG2) said, It happens a lot. If I see someone and I really don’t want to start a conversation, I'll just look down at my phone and they'll do the same thing. You can see. You make that awkward distant eye contact, and you're both like "Okay, we don’t want to talk so we'll keep walking." It’s mutual.

Although the two examples showcased how mobile technology could be used to avoid strangers, Monica (FG1) said that mobile technology can be used to avoid an acquaintance:

I’m running late and I don’t feel like having conversation I’ll just go on my phone "Oh I can’t see you. I swear." My sister actually just texted me this morning or talked to me this morning about this girl that she has class with who we've known for years, and they’ve had a little bit of problems before, but she tells me that she walks in and the girl literally sees her and
just stares at her phone. We actually just talked about this this morning so it's pretty funny. I think people use it as a way to avoid.

Some participants claimed that their use of mobile technology to avoid an interaction depends on how they look or how they feel on that particular day. For example, Donna (FG3) said, “If I’m out in public sometimes and I don’t really look the best and I see someone I know, I'll pull out my phone and walk past so I don’t have to look up, and I don’t have to see them here, and keep walking.” Brooke (FG3) added that she uses mobile technology to avoid interacting with people “on days that I'm not feeling so swell or I just don’t want to talk to a certain person. Or I'm feeling more introverted that day, I’m just like ‘yeah I’m going to be on my phone all day’ and not talk to anyone.” Similarly, Simone (FG1) said, “If I see someone, especially on campus, ‘cause I look like I’m homeless when I go to school because I’m not going to put the effort into looking nice. All the friends I know from going out I’ll occasionally see them on campus. I don’t want them to see me looking like this. I need to clean up.”

Besides avoiding people they know, participants also said their phones are a great excuse for avoiding interactions with representatives of political, religious, and other types of campus organizations. Kelsey (FG3) said, “Sometimes when I don’t want to be stopped by the people who have booths set up on campus I will purposely pull out my phone and make it look like I’m doing something so I have that much better of a chance that they wont call me out and ask me to hear about whatever they are trying to talk about.” Rebecca (FG2) said, “I know when those voter people are on campus I'll call my mom or something: ‘I'm avoiding these people, I'm so sorry that I'm talking to you right
now.” Jennifer (FG2) added how she responds to religious groups on campus who try to recruit her: “Oh I'm sorry I have to take this call.’ Or the headphones thing, I'll have my headphones on.” Mitchell (FG2) also said he wears headphones to avoid interacting with people while walking in public: “I'll see someone I really don’t want to talk to and I'll just press it or something to make them know that I'm listening to music. Sometimes it’s not even on.” Similarly, Jason (FG1) said he has pretended to start a conversation on his cell phone to avoid interacting with somebody:

I realize that if you pull out your phone and look busy… if there’s someone you really don’t want to talk to they'll still stand there and talk to you… So I’ve done it to the extreme where I’ll pretend that my phone is vibrating and I will start a fake conversation… I’ve done that before, but I don’t do that often. Only when it’s the extreme and this person will not get away from me.

In summation, participants noted how they purposely use mobile technology to avoid uncomfortable, awkward, or unwanted F2F interactions. These students benefit from the use of mobile technology because it enables them to avoid undesirable F2F interactions; however, their use of mobile technology creates a barrier between the user and people in the physical world, thus decreasing the frequency of F2F interactions, and helping explain why they generally saw isolation as a disadvantage, even if it was sometimes a somewhat welcome one.

Thus, answering RQ1b, the focus group discussions revealed multiple disadvantages of using mobile technology during F2F interactions. The three main themes that emerged from the discussions were that the use of mobile technology during
a F2F interaction is disrespectful, distracting, and facilitates avoidance of the interaction. Although all the participants noted that using mobile technology is disadvantageous, many admitted to using mobile technology during F2F interactions. This raises the question: what determines whether the use of mobile technology is appropriate, or inappropriate, during a F2F interaction?

**RQ2: What factors determine the appropriateness of using mobile technology during F2F interactions?**

When discussing situations when the use of mobile technology was appropriate or inappropriate during a F2F interaction, two major themes emerged. The appropriateness of using mobile technology depends both on the type of relationship between people interacting, and the context of the interaction.

**Type of relationship**

Participants noted how the familiarity between people can determine the appropriateness of using mobile technology during an interaction. However, they were divided as some participants indicated that familiarity made it more appropriate to use mobile technology, while others said familiarity made the use of mobile technology less appropriate.

*Strong-tie relationships*

During the discussion, some participants said that they feel more comfortable using their phones during face-to-face interactions with people they see on a regular basis and are close with. For example, Cassidy (FG2) said,

> It's like a comfort level. When you're with your best friends, you know the big stuff, and if there's nothing super important to talk about, it could be a
conversation starter to be on social media… we might as well be on our phones because we're not really talking about anything super-important anyways. So it's a comfort level. Whereas someone you're just getting to know, there is a lot to talk about, because you're trying to figure out who they are and what their interests are. So there's more to talk about… People that I'm closer to I'm more likely to be on my phone because there's less of an expectation to have an intentional conversation, but someone I don’t know as well, or I’m meeting for a business thing, or an actual meeting setting, or talking about a serious conversation with somebody you don’t really know - that is when I wouldn’t be on my phone. But if I’m with friends and I see them all the time, we talk all the time; it is more acceptable to be on my phone because it’s not as much pressure.

Similarly, Charlie (FG3) noted that it is okay to use mobile technology around her family because she sees them often: “I go home pretty frequently, more than the average college student, and I'm always talking to my mom so they're not too picky about the phone.” When describing how being more familiar with somebody makes it more appropriate to use mobile technology while interacting with them, Jack (FG3) noted how the dynamic of his relationship with his parents changed after moving away to school, and that changed the appropriateness of using mobile technology during F2F interactions with them. He said,

When I was living back home with my parents it wouldn’t be as big of a deal to go on my phone while I’m with them because we already see each
other everyday. Nowadays when I go back home it has been a few months
so we have a lot of stuff to talk about. So I feel like if I would pull out my
phone with my parents when I go back home it would be a little bit more
disrespectful in that context because I don’t see them everyday anymore.

We don’t have an everyday face-to-face interaction or anything.

While some participants noted that it was appropriate to use mobile technology
while interacting with somebody they were familiar with, other participants said that they
find it inappropriate to use mobile technology with somebody they are familiar with. For
example, Kelsey (FG3) said that the quality of the emotional connection between people
determines whether it is appropriate to use mobile technology during an interaction.

When I'm with my parents or my girlfriend I'm not on my phone as much
because I care. I want to listen to them and hear what they have to say. But
if I'm around my best friend, who I talk to everyday, probably half the
conversations we are having is gossip or something that we texted about
earlier in the day. It's like, "Okay, obviously I'm listening and obviously
I'm not disrespecting you by getting on my phone. You know that I still
want to hear what you're going to say and I'm probably going to text you
about it later anyways." So even if I'm sitting in their room, I'll just be
chilling on my phone, but if I'm in the same room of somebody who I feel
like, there is a higher level of emotional bond with, I feel like if I pull out
my phone they'll notice and will be put off by it.

Similarly, Jason (FG1) noted the differences between interacting with a significant other
and interacting with strangers:
My ex girlfriend, who I was really, really serious with. If I'll be having like a conversation with her literally sitting two inches away from her and she'll be so engrossed in her phone that it could be probably three whole minutes and she won’t even look up. Someone who you're that close with who you really trust and really want to communicate with and you cant… it was like totally heartbreaking. I think the biggest difference, I think everybody can relate to this to some extent. Having just met you guys ten minutes ago if we were having a small conversation and you pulled out your phone and it would be a casual conversation like I had just met you, that would be no big deal. Everybody does that. But if it is someone who you have known for a while and the context of the conversation is serious. If you couple it with the context of the conversation and your relationship with the person; I think those two compounded and if you can’t get through to someone you feel totally helpless. I think it all depends on the context and who the person is.

Likewise, Monica (FG1) added how it felt to interact with her romantic partner who was distracted by mobile technology. She said,

My boyfriend, he a lot of times, we'll be at dinner, and his phone will buzz, and then I’ll be literally talking, and he'll just completely get into his phone and ignore everything I say, and not get back to me because he just is super unfocused. So it’s frustrating and it hurts, but yeah it’s not a good feeling.
Weak-tie relationships

Without that intimacy or familiarity, then, becomes less appropriate to use mobile technology during F2F interactions, participants said. For example, Jessica (FG2) noted that she would feel uncomfortable using mobile technology while interacting with a stranger because of how they might perceive her use of mobile technology. She said:

If you're more close with someone it’s more okay to use social media, go on your laptop, search something, because you already know each other. It’s cool…because you already have an established relationship. You kind of understand what the other person is thinking. You're not jeopardizing anything and there's no negative response when you do it. If you're with someone you don’t know it’s just kind of awkward…with someone who you just met, they don’t know who you are, they don’t know, "Oh, this person doesn’t actually care what I’m talking about." When its someone you might know, "Oh no, they care what I’m talking about, they're just also multitasking.”

Similarly, Sarah (FG2) said that it is inappropriate to use mobile technology when interacting with somebody for the first time. She said, “It kind of shows that they don’t care about your time or you don’t care about their time when it’s the first interaction.”

Likewise, Alexandra (FG2) said, “If I had just met this person and they’re texting I would be like, ‘Wow, that girl is kind of rude.’ We are just getting to know each other and she's not listening.” However, although most participants said how it was inappropriate to use mobile technology when interacting with somebody they were unfamiliar with, Rebecca (FG2) disagreed. She noted that being unfamiliar with somebody can lead to a lack of
comfort with the interaction, which would influence the use of mobile technology. She explained,

When you're with acquaintances I feel like there is more of that awkward tension and you're not 100% knowing them, so you're less likely to talk to them the whole time. There's more awkward silences and you're still feeling it out... When you're with acquaintances you're more likely to use your phone, but when you're with your family members you’re less likely to use it... When you're with your family you're more likely to be talking and you respect them more, so you want to be more involved with their conversation.

In summation, the appropriateness of using mobile technology depends on the type of relationship between people who are interacting. Participants noted that being more comfortable or familiar with somebody contributes to the use of mobile technology during a F2F interaction. Participants also said that it would be inappropriate to use mobile technology with somebody who they have a strong emotional bond with because it would be inconsiderate to not devote themselves wholly to the interaction.

**Context of interaction**

In addition to the type of relationship between individuals, participants also noted how the context of the face-to-face interaction changes whether the use of mobile technology is appropriate.
Professional/formal meetings

Participants said that it was inappropriate to use mobile technology during a scheduled meeting for a specific purpose. For example, Sarah (FG2) said, “In the formal settings you don’t want to be on your phone, especially if it's a meeting. If you're trying to collaborate and make plans, your mobile device will distract you from actually making the plans. In order to be more efficient with time it is best to keep that away.” Additionally, Donna (FG3) said it is inappropriate to use her cell phone while meeting with a professor or employer.

If I'm going to a teacher's office hours I would never be on my phone. I don’t want them to be like “Oh, she came here and she's on her phone.” Or like if my boss is sitting and giving me orders about something I won’t be on my phone, but if I’m with my friends or my boyfriend or someone who, I guess, is in my generation, or a little bit younger, I would not hesitate to pull out my phone... If I’m in a professional setting, like academics, or work, or a possible interview, or some sort of professional connect, I would not be on my phone because that’s not a good look. But if I'm in a social setting then I would be more likely to do it, like if I was around my little sister or something, I would be on my phone.”

Brooke (FG2) added that she would not use mobile technology when interacting with a professor, employer, or during a scheduled meeting.

I would never get on my phone recreationally around my boss or with a teacher, unless it was something relevant to the conversation...It is definitely less acceptable to me when you're around a professional or
someone that is relying on taking time out of their day to talk to you. It's really like, "I don’t want to waste their time." Like if we have a limited amount of time then I'm not going to waste my time being on my phone. I'm going to show you that I really care about what we're talking about right now. So it depends on the agenda.

Similarly, Alexandra (FG2) said that when she makes plans to formally meet with somebody to do something, it is inappropriate to use mobile technology, but if she is casually hanging out with friends then it is appropriate for them to use their cell phones. She said,

If I make a plan to go to lunch with somebody and I want to catch up with them, I'm not going to be on my phone because, "Oh, we made this plan to talk." But if I just sat down at lunch with somebody and was like, "Oh, hey, look who is here," I’ll look at my phone because it’s not like we made this plan.

Likewise, Simone (FG1) noted how it is appropriate to use mobile technology during casual interactions with multiple people, but that one-on-one conversations are more intimate; and therefore, it would be inappropriate to use mobile technology during these types of interactions.

It's also different if it's a one-on-one conversation or multiple people because my roommates, like, they'll just come into my room and I’ll be doing homework and they'll just come in. They're like, "Oh we'll be quiet. We just want to be together." I’m like “okay,” that’s just what they are like. They like always want to be together. So if I’m saying something
[and] one person is on their phone, that’s cool. I feel like it’s different if it’s just a one-on-one conversation because I’m purposely giving you all of my attention. Telling you everything. Can you kind of just be respectful back to me? If it was more people in there then it’s not that big of a deal.

*Important vs. casual conversations*

Participants also noted how the significance of the conversation determines whether or not it is appropriate to use mobile technology. For example, Brooke (FG3) said, “If you're supposed to be having meaningful conversation, if you're friend calls you and is like ‘Hey, we need to talk right now,’ … you're there to talk.” Similarly, Sasha (FG1) said that it is appropriate to use mobile technology while having a trivial conversation, but that it is inappropriate during serious conversations.

I think when me and my roommates come home, and we're just sitting around, we are all checking if we have homework. We’re looking at Twitter after a long day. I don’t really mind that, but if I’m like talking about something… so like if I’m telling a story about something that happened like everybody is for sure paying attention, but I do think if any of them pulled out their phone while I was in the middle of telling them about the crappy day I had it would be like “Are you serious right now?”… If I’m talking to you and trying to have a serious conversation about something, tell you how I feel and you pull out your phone, that's just not right.
Additionally, Simone (FG1) said that she doesn't mind if somebody uses mobile technology during an interaction, as long as they are not having an important conversation.

I just don’t care when my roommates do that to me, if it’s something trivial or I’m telling them something stupid or they're telling me something stupid. … If you're actually trying to tell me something important I’m going to do you the respect of listening to you and being in the conversation because that is just what you should do.

However, Monica (FG1) disagreed with the notion that it is appropriate to use mobile technology during casual conversations. She said, “Even if I’m saying something stupid about my day, I’m trying to have a conversation and talk to you because I haven't seen them the whole day. I find it rude regardless of the context of what I’m talking about.”

Likewise, Dimple (FG1) said, “If I’m going to listen to your conversation I’m going to stop everything I’m doing and be interested in what your day was or how your day went.”

In conclusion, with regard to RQ2, the appropriateness of using mobile technology during F2F interactions varies depending on the type of relationship between people interacting together, and the context of the interaction between those people. Participants differed when discussing how familiarity with another person determines the appropriateness of using mobile technology during an interaction. Some participants noted that being more familiar with somebody makes it more appropriate to use technology, while other participants said that increased familiarity between individuals makes it inappropriate to use mobile technology during an interaction. Participants also addressed how it was appropriate to use mobile technology during casual interactions,
whereas they considered the use of mobile technology during scheduled interactions inappropriate.
Discussion/Conclusions

This study investigated how college students use mobile technology during face-to-face (F2F) interactions to better understand how youth believe technology in their day-to-day lives is changing their interpersonal communication. This thesis contributes to our understanding of how concurrent mobile technology use enhances (or complements) and detracts (or replaces) F2F interactions by investigating this phenomenon through the lens of media niche theory, media multiplexity, and perpetual linkage. This thesis adds to Katz & Aaukhus’s (2002) philosophy of understanding how technology use influences everyday life, *apparatgeist*, by exploring how college students use, and feel about the use of, mobile technology during F2F interactions. Framework analysis was used to identify emerging patterns and themes from focus group discussions. Direct quotes from college students were used to provide detailed descriptions of their experiences with F2F interactions when mobile technology was present. The major themes that emerged from the data were categorized to address each respective research question.

While some might automatically assume that using technology during F2F interactions is a bad thing, these college students who participated in the focus groups believed there are advantages that can result. Two major themes (see Figure 1) emerged when addressing the benefits of using mobile technology during F2F interactions (RQ1a). First, participants said mobile technology use enhances conversations by providing access to information to discover new topics of discussion that would otherwise be unavailable. Participants noted that when conversation becomes stilted or awkward, mobile technology allows the people in the conversation to come up with new points of discussion to keep the conversation going. For example, participants noted how they...
often searched for videos or articles that they then showed the people with whom they were talking. Some participants noted how they used mobile technology to search for stories or videos to use as conversation starters, or to learn information that they can use to settle an argument. As a result, these participants seemed to suggest that their conversations go on longer, and cover more topics, than they would without the use of mobile technology.

**Figure 1:** Advantages and disadvantages of using mobile technology during face-to-face interactions

According to media niche theory, two media types can co-exist if they satisfy different user gratifications, or satisfy similar user gratifications in different ways. When individuals use mobile technology to enhance conversations by introducing new information, they are using mobile technology to satisfy a gratification (i.e. new conversational topics) that F2F communication alone cannot satisfy. Thus, F2F communication and mobile technology co-exist as it enhances the F2F conversation by introducing topics that otherwise would be undiscovered if not for the introduction of
mobile technology. For example, somebody can pull out a phone to show someone else a video when a conversation starts to die down instead of awkwardly sitting with that person in silence.

The second benefit that mobile technology provides for F2F interactions is that the collaborative use of mobile technology can serve as a bonding tool that brings people together and strengthens the quality of a F2F interaction. Participants noted how they used mobile technology to achieve a common goal, such as learning a new dance routine or cooking a meal, which brought them closer together. Similarly, participants said they have fun using mobile technology with friends by creating videos together to post on social media. These findings contribute to media multiplexity theory because they suggest that people with strong-tie relationships will not only use multiple forms of technology for mediated communication, but that the use of additional forms of media during F2F interactions can result in people growing closer through the use of mobile technology. For example, if two people interacting were not close to one another, it can be assumed that they would not use mobile technology collaboratively because of the lack of comfort and closeness. Using mobile technology in this fashion requires people being physically close together while focusing on a common task together. Existing research focuses mostly on how people use technology to grow closer when they are not physically present with each other. This study extends the research by showing how media multiplexity theory and the use of multiple communications channels also can apply when people are interacting face-to-face.

While participants pointed out how mobile technology enhanced their face-to-face interactions, they were not blind to the disadvantages. Three major themes emerged when
discussing the disadvantages of using mobile technology during F2F interactions. First, mobile technology distracts people from focusing on their F2F interactions, which occasionally results in requests to repeat what was said, and apologies from the distracted party. Participants said they often disengage from interactions in the physical world when they access mobile technology. Although people may feel like they are capable of multitasking between using mobile technology, and contributing to a F2F interaction, it is unlikely that a person is completely committed to an interaction while using mobile technology, as participants’ discussions revealed. For example, participants said that sometimes they have to ask people to repeat what they said because they were focused on their cell phones instead of paying attention to the conversation.

These findings give weight to media niche theory in regards to how mobile technology competes with F2F interactions to satisfy a limited amount of user gratifications in the same space. Mobile technology and F2F conversations both are competing for the same resources (i.e. time and attention), and considering mobile technology provides more gratification opportunities than F2F conversations because it transcends time-space limitations, users may choose to use mobile technology when they are bored with their F2F interactions. When mobile technology displaces F2F conversation as the preferred method of interpersonal communication, it can result in users dedicating their time and attention to the mobile technology instead of the F2F interaction. Also, the concept of perpetual linkage can be used to explain how people feel the need to constantly be connected to their mobile technology. Each time people access mobile technology, there is new information available, a new connection established, or a new conversation to be started. Thus, participants noted that they get excited when they
receive a notification on their cell phone because it signals something new, whereas a F2F interaction perhaps can seem boring compared to the potential of something new.

Interestingly, students noted that it is considered rude or disrespectful to use mobile technology while interacting with another person, even though they admitted that they do it themselves. Participants said they feel insulted and disrespected by somebody using mobile technology during a interaction because they feel less important than the mobile technology. To the person being ignored, it feels as if mobile technology is being chosen over the interaction. Still, they all noted that they still do it themselves, even though they know it is inconsiderate. Although media multiplexity claims that people with strong-tie relationships will use more media types with people they are closer with, this is under the assumption that the differing media types are used to further develop the relationship. For example, when one person uses mobile technology while another person feels that the use of mobile technology is unwarranted and detracting from the conversation, this potentially can lead to feelings of resentment and anger towards the user of mobile technology. Although the use of mobile technology can contribute to an interaction, thus strengthening the relationship, mobile technology can also detract from F2F interactions, which can possibly weaken the relationship between two people.

Participants also noted how they tend to use mobile technology to avoid unwanted interactions. For example, participants said they use mobile technology to access the internet or social media, or text other friends instead of talking to new classmates on the first day of class or interacting with strangers on an elevator. Even though using technology to avoid awkward interactions seems like an advantage, participants noted how ultimately using mobile technology as a tool to isolate themselves decreases the
potential for new F2F interactions to occur. These findings suggest that these individuals choose to use mobile technology instead of engaging with a F2F interaction because the mobile technology is a more attractive option. According to media niche theory, users are choosing mobile technology because it serves more user gratifications than F2F interactions. Thus, the mobile technology displaces F2F interactions when individuals choose to use technology to avoid F2F interactions.

Besides advantages and disadvantages, this thesis also explored when it might be considered appropriate to use mobile technologies during F2F interactions. Two major themes emerged when discussing the appropriateness of using mobile technology during F2F interactions (see Figure 2). First, participants said that the type of relationship between people is a determinant for whether it is appropriate or not to use mobile technology during that interaction. However, participants were divided on whether more familiarity meant using mobile technology during F2F interactions was more or less appropriate. For example, some participants said that being more comfortable with somebody allows for the use of mobile technology because there are fewer expectations for the interaction and that the other person will understand the intentions for using mobile technology. In contrast, others said that it is inappropriate to use mobile technology around people they are more familiar with because they want to be attentive when interacting with somebody they care about. The fact that some participants said they are more likely to use mobile technology around people they were close to is in accordance with media multiplexity theory, which states the use of mobile technology represents how people with strong-tie relationships use more media types than people
with weak-tie relationships. Therefore, these findings give weight to the idea that media multiplexity applies to both long-distance, and F2F, interactions.

Figure 2: Factors that determine the appropriateness of mobile technology use during face-to-face interactions

However, other participants noted that it would be inappropriate to use mobile technology when interacting with people they were close with because it would detract from the interaction. They noted how when interacting with people they feel close with, it is important to respect the other person by being attentive during the interaction. So, when the use of mobile technology distracts them from interacting with somebody they are close with, that makes the use of mobile technology inappropriate. These findings give weight to the idea of perpetual linkage and how people are constantly connected to their communication technologies, which could then distract them from their interactions in the real world. Therefore, we suggest that the use mobile technology is appropriate during F2F interactions with people they are close with when the mobile technology enhances the interaction. However, the use of mobile technology is deemed inappropriate
when it isn’t being used to enhance the F2F interaction. Perhaps these differences in findings with regards to appropriateness of mobile technology use can be attributed to the different types of relationships people have, beyond just strong vs. weak-tie relationships. For example, participants noted how it was inappropriate to use mobile technology when interacting with family or romantic partners, but mobile technology use was appropriate when interacting with close friends. Future studies should explore this phenomenon further to identify how the use of mobile technology during F2F interactions is influenced by the specific type of relationship between individuals. These differences in findings regarding appropriateness also point to the idea that technology should not be viewed holistically, and not deterministically. These findings give weight to the fact that people have different interpretations and meanings of technology use during F2F interactions.

Second, participants said the context of the interaction influences whether it is appropriate to use mobile technology. For example, they said it was appropriate to use mobile technology during a casual interaction, but that it would be inappropriate to use their phones during a scheduled or planned meeting, especially in a work or school setting. These findings contribute to apparatusgeist, the philosophical understanding of technology use in everyday life, by identifying societal structures that prohibit or allow the use of mobile technology during F2F interactions.

Overall, this thesis further supports the idea that there is a complex relationship between the use of mobile technology and F2F interactions. By nature, communication is subjective depending on the people who are communicating, how they are communicating, when they are communicating, and why they are communicating. In conclusion, determining whether the use of mobile technology benefits or interferes with
F2F interactions depends on the context of both the relationship of people interacting, and the type of interaction. These focus groups thus suggest a need for a more nuanced understanding of the role of technology in interpersonal communication, as mobile technology simultaneously helps and hinders F2F communication. As participants noted, especially as illustrated by their discussion of avoidance, technology is not inherently good or bad. Thus, this study serves as a warning for researchers who take a technologically deterministic position, whether it be a utopian or dystopian view of technology.

This study was limited in that it relied on qualitative data collected from a small group of college students from one university, so these findings are not generalizable. However, despite this lack of generalizability, this study still is important for shedding light on the impact that technology has on communication. Such a qualitative study provides a holistic snapshot of how a particular group of students in a particular group of time viewed the role of mobile technology in face-to-face interactions. Future research should conduct similar qualitative research exploring how different segments of the population use mobile technology during F2F interactions to further understand this complex phenomenon. For example, future studies should focus on children, teenagers, young adults who are not enrolled in college, adults, the elderly, and people of varying socio-economic conditions. Future research should also tailor discussion questions to focus on a specific type of relationship – familial, romantic, close friendships, and acquaintances – to further understand how the use of mobile technology during F2F interactions changes for different types of relationships.
Ultimately, this thesis contributes to our understanding of media multiplexity and media niche theory by extending these theories to include how mobile technology might facilitate, or detract, from F2F interactions. Previous studies incorporating media multiplexity did not consider how communication technologies could be used to enhance interactions between strong-tie relationships during F2F interactions. As this study showed, such enhancement included sparking conversations and strengthening bonds. According to media niche theory, the use of mobile technology can enhance a F2F interaction when it serves different user gratifications than the F2F interaction without disrupting the users’ attentiveness to an interaction. However, if the mobile technology serves similar user gratifications as the F2F interaction, then a user will choose to use mobile technology instead of engaging with the F2F interaction, as evidenced when participants noted how they used technology to avoid unwanted interactions. Thus, this thesis showed the advantages and disadvantages of using mobile technology during F2F interactions, offering insight into how college students perceive the appropriateness of using technology during F2F interactions, and furthering our understanding of media niche theory and media multiplexity theory.
APPENDIX A: Survey

1) Sex/Gender
   __ Female
   __ Male
   __ Transgender
   __ Prefer not to respond

2) Race/Ethnicity
   __ African American/Black
   __ Asian/Pacific Islander
   __ Hispanic/Latino
   __ Multiracial
   __ Native American/American Indian
   __ White/Caucasian
   __ Not Listed (please specify)
   __ Prefer not to respond

3) Class Status
   __ Freshman
   __ Sophomore
   __ Junior
   __ Senior
   __ Graduate student

4) Age
Write your age here: _______

5) What types of digital technology devices do you have access to on a daily basis?
   __ smartphone with internet access
   __ laptop
   __ personal desktop computer
   __ tablet/iPad
   __ internet enabled television set
Write other forms of digital technology in the space below:

6) How many hours per day do you spend using digital technology
   __ None
   __ 1-3 hours/day
   __ 3-5 hours/day
   __ 5-10 hours/day
   __ More than 10 hours/day

7) Which of the following are applicable to your living situation? (Check all that apply)
   __ I live alone.
   __ I live with other students.
   __ I live with roommates who are not students.
   __ I live with parents(s), relative(s), or guardian(s).
   __ I live with a husband/wife/domestic partner/significant other
   __ I live with my child/children.

8) Which best describes where you currently live?
   __ Residence hall
   __ Off-campus housing
   __ Fraternity/Sorority housing
   __ Living at home with family
APPENDIX B: Discussion Questions

1) How do you use mobile technology in your day-to-day life?
2) How do you use mobile technology during face-to-face interactions?
3) How does your use of mobile technology assist the face-to-face interactions you have with other people?
4) How does your use of mobile technology interfere with the face-to-face interactions you have with other people?
5) How do you feel when somebody you are interacting with is distracted by mobile technology?
6) How has mobile technology distracted you from a face-to-face interaction?
7) How have you used mobile technology to avoid interacting with another person?
8) How have you used mobile technology to communicate with somebody who was physically near you?
9) How would you feel around a group of people who were all using their cellphones but you didn't have access to your cellphone?
10) How does your use of mobile technology change depending on who you are with, and why?
References


