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SOCIAL IMPLICATIONS OF ADOLESCENT TEXT MESSAGING

by

Sarah S. Tulane

A dissertation submitted in partial fulfillment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Family and Human Development

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2012

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ABSTRACT

Social Implications of Adolescent Text Messaging

by

Sarah Tulane, Doctor of Philosophy

Utah State University, 2012

Major Professor: Dr. Troy E. Beckert
Department: Family, Consumer, and Human Development

The purpose of this study was to pursue an understanding of social impacts of text messaging on adolescents. Mixed methodologies were used to gain an understanding of the social impacts of text messaging for adolescents. A sample ($N = 218$) of high school students was used to examine texting behaviors and practices, face-to-face communication preferences, and adolescent opinions about the use of text messaging in common social situations.

Texting behaviors and perceptions were related. Adolescents indicated they pretend to text in social situations for various reasons. For some, texting was an avoidance technique of self and others, others pretended to text to maintain a positive appearance in social situations, and for others pretending to text provided a sense of security. Hierarchical multiple regression was used to examine face-to-face communication in relation to texting behaviors and texting perceptions. Overall, texting behaviors and texting perceptions contributed to face-to-face communication. Finally, adolescents explained their perceptions of adult misconceptions of adolescent text

messaging. They felt that adults have misconceptions about motivations and practices associated with text messaging, misconceptions concerning message content, and misconceptions about developmental impacts. There were also some participants who felt adults have accurate perceptions of adolescent texting.

(120 pages)

PUBLIC ABSTRACT

Social Implications of Adolescent Text Messaging

by

Sarah Tulane, Doctor of Philosophy

Utah State University, 2012

Major Professor: Dr. Troy E. Beckert
Department: Family, Consumer, and Human Development

The purpose of this study was to gain an understanding of the social impacts of adolescent text messaging. A sample of high school students was used to examine texting behaviors and practices, face-to-face communication preferences, and adolescent opinions about the use of text messaging in common social situations.

Perceptions of texting in social situations and actual texting behaviors were positively related. Teens indicated they pretend to text in social situations for various reasons. For some adolescents, texting was a way to avoid different people and situations, for others pretending to text gave them a favorable appearance, and others felt safe in different situations when they pretended to text. Overall, texting behaviors and texting perceptions contributed to teens' face-to-face communication. Adolescents also explained their perceptions of adult misconceptions of adolescent text messaging. They felt that adults have misconceptions about teen reasons for texting and actual texting behaviors, misconceptions concerning message content, and misconceptions about

impacts on development such as social and language abilities. There were also some participants who felt adults have accurate perceptions of adolescent texting.

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Sarah S. Tulane

CONTENTS

	Page
ABSTRACT.....	iii
PUBLIC ABSTRACT	v
ACKNOWLEDGMENTS	vii
LIST OF TABLES.....	xi
LIST OF FIGURES	xii
CHAPTER	
I. INTRODUCTION.....	1
II. LITERATURE REVIEW	7
Theoretical Framework	7
Texting and Social Life.....	8
Reasons for Texting	9
Social Rules and Texting	9
Youth Culture.....	12
Imaginary Audience.....	13
Texting and Communication.....	15
Demographic Characteristics	16
Academic Performance	18
Texting Behaviors and Perceptions	19
Negative Implications of Texting Behaviors and Perceptions.....	21
Adult Perceptions of Texting	22
Parents and Text Messaging	22
School Administrators, Teachers, and Text Messaging.....	25
Constructing Spaces.....	26
Summary	27

	ix
III. METHODS.....	29
Research Design.....	29
Procedures.....	30
Measures.....	31
Participants.....	35
Qualitative Data Analysis.....	35
IV. RESULTS.....	39
Descriptive Analysis.....	39
Correlation Between Texting Behaviors and Perceptions.....	45
Reasons for Pretending to Text.....	46
Avoidance Technique.....	49
Positive Appearance.....	51
Personal Security.....	53
Willingness to Communicate and Texting.....	53
Preliminary Analysis.....	55
Hierarchical Multiple Regression.....	56
Adult Misconceptions of Adolescent Texting.....	59
Misconceptions of Motivations and Practices.....	61
Misconceptions of Message Content.....	65
Misconceptions about Developmental Impacts.....	67
No Misconceptions.....	68
Summary.....	69
V. DISCUSSION.....	71
Relationship Between Behaviors and Perceptions.....	71
Pretending to Text.....	73
Face-to-Face Communication and Texting.....	75
Adult Misconceptions.....	78
Overall Data Examination.....	82
Limitations.....	83
Future Research.....	84
REFERENCES.....	87
APPENDIX.....	96

CURRICULUM VITAE.....104

LIST OF TABLES

Table	Page
1 Frequency and Percentages of Participant Social Texting Behaviors.....	42
2 Perceptions of the Appropriateness of Texting in Social Situations.....	44
3 Perceptions of the Acceptability of Texting in Social Situations	44
4 Correlation Between Actual Texting Practices and Perceptions of Appropriateness of Texting.....	47
5 Blocks for Hierarchical Regression Analysis	55
6 Correlations Among Willingness to Communicate, Texting Behaviors, and Texting Perceptions	57
7 Hierarchical Multiple Regression Analysis Predicting Willingness to Communicate from Demographic Characteristics, Texting Behaviors, and Texting Perceptions	58

LIST OF FIGURES

Figure	Page
1 Number of texts sent in a month	41

CHAPTER I

INTRODUCTION

Cell phone use is so pervasive that some researchers suggest that it will become the fetish of our century (Garcia-Montes, Caballero-Muñoz, & Pérez-Álvarez, 2006). As a communication device, this prevalent medium must have an impact on many aspects of social life. For American adolescents, texting has become the preferred method of communication with friends (Lenhart, 2010). Socially speaking, texting is impacting friendships, relationship formation, duration, and conclusion, as well as adolescent interactions with parents. Texting is a daily communication tool for many teens, and as such, texting is influencing adolescent sociality.

Adolescents have historically been quick to adapt to new technologies (Thurlow & Bell, 2009). For example, between 2005 and 2010 there was an increase in time adolescents spent using social networking sites such as Facebook, Twitter, and YouTube (Rideout, Foehr, & Roberts, 2010). Adolescents have also rapidly adopted additional newer communication technologies such as texting (Brown & Bobkowski, 2011). Communicating as an adolescent varies among these newer technologies. Whereas communication on social networking sites involves public presentation of both private and public information, texting is a private presentation of more often private information. As a private form of communication, texting is used to build face-to-face social networks (Berg, Taylor, & Harper, 2005).

Using text messaging to build face-to-face social networks is appealing to adolescents. Even children between the ages of 10 and 11 enjoy cell phones because of the opportunity to text (Davie, Panting, & Charlton, 2004). The appeal for texting is to maintain social relationships and schedules with short messages, which can be sent with enough delay for thinking and processing. Since adolescents are faster to adapt to new technologies, perhaps this is where misunderstandings and concerns over teens' texting have presented themselves for adults.

For teens, as their cell phone adoption and associated amounts of texting increase, texting becomes an unremarkable and common part of their lives. Texting is becoming deeply embedded in the social aspects of being a teenager and is impacting adolescent social development. In fact, some researchers propose that there is a youth culture surrounding text messaging which adults do not necessarily perceive or understand (Oksman & Turtiainen, 2004). Adolescent texting has increased over the last few years, but research concerning the developmental implications of text messaging is lagging behind the pervasiveness of text messaging (Mahatanankoon & O'Sullivan, 2008). Furthermore, much of the research available concerning the developmental impacts of texting is conducted with college students, not high school students. Yet, high school-aged adolescents are the age group most involved in texting (Lenhart, 2010).

As with most communication forms, adolescents have developed rules about texting. Two basic types of rules exist: situational and relationship. As part of a developing youth culture, adolescents understand these rules and employ their use. Little research is available examining what specific social situations are acceptable for text messaging. Little research is available examining what specific social relationship

formation and dissolution activities are appropriate for text messaging. Since there is a youth culture surrounding text messaging, it is important to examine how this youth culture is influencing the acceptability and appropriateness of text messaging in adolescent social interactions and relationships.

The effects of text messaging on adolescent social development can most readily be seen by looking at the reasons they give for text messaging. Adolescents text when they are bored, turning dull moments into social situations (Cupples & Thompson, 2010; Oksman & Turtiainen, 2004). They use text messaging to seek emotional support or even to escape from distressful situations (Harley, Winn, Pemberton, & Wilcox, 2007; Jin & Park, 2010). Some adolescents text to ask questions, to set up social situations, and to update friends about life events (Ling, Julsrud, & Yttri, 2005). Other adolescents text for the sake of the social interaction and to maintain social contact (Lenhart, Ling, Campbell, & Purcell, 2010). Many desire to maintain social status even if it means they need to pretend to text in certain social situations (Cupples & Thompson, 2010). Although there is research available about why adolescents choose to text, very little research is available regarding reasons why adolescents choose to pretend to text in certain situations.

Some propose the private communication facilitated by text messaging among friends is increasing the power of friend relationships at the expense of family relationships (Davie et al., 2004). Adolescents embrace the social value of cell phone texting. They view texting similar to note-passing, even to keep in contact with people in the same room (Lenhart et al., 2010). Moreover, many adolescents feel that they could not live without the use of texting in their day-to-day lives.

Much of the appeal of text messaging comes from the characteristics of the communication: it is convenient, relatively inexpensive, and follows a quicker pace than do more traditional communication options (Bryant, Sanders-Jackson, & Smallwood, 2006). With an opportunity to think before responding, adolescents feel this is a great way to communicate in emotional situations because they have control over their communication. Although many adolescents feel this is a common, advantageous communication form, they also point out that sometimes humor or sarcasm are not conveyed adequately through text messaging and can be difficult to interpret or could lead to offense (Cupples & Thompson, 2010). This may be because understanding the content of texts depends on the receiver (Faulkner & Culwin, 2005). Therefore, although texting is convenient, there are still issues that adolescents face in accurately communicating thoughts, feelings, and ideas.

Certainly there are expressed concerns about the impact of text messaging on teenage face-to-face communication. Little research has examined, with teen populations, the connection of texting behaviors and perceptions to adolescent face-to-face communication. Social cognitive theory, as proposed by Bandura (1986), is a useful theory toward understanding texting perceptions and behaviors. As will be illustrated, this theory is also helpful in explaining the relationship among texting behaviors, perceptions, and face-to-face communication.

Much of the concern surrounding the negative developmental impacts of adolescent text messaging comes from adult populations. As texting becomes a more common component of adolescent life, parental concern and educator apprehension have been highlighted in the media (Kemp, 2010; Thurlow & Bell, 2009). Parents and other

adults are concerned about the impact of text messaging on school performance.

Incidents of academic dishonesty (Diamantes, 2010) have led many schools to limit or ban cell phones (Lenhart, 2010).

Recently, adults have also expressed concerns about other socially dangerous outcomes from texting including concern over message content. For example, there is concern over “sexting” or sending messages sexual in nature or that contain sexual images, and cyberbullying through text messaging. Adults have also expressed a fear that face-to-face communication is being affected and that teens are losing abilities necessary for more personal, face-to-face relationships to exist. As the active users of the medium, teenagers should be given a voice regarding adult perceptions of texting, to either add veracity to adult arguments or clarify the actual adolescent experience.

Adolescents’ text messaging peaks during the high school years (Lenhart et al., 2010). Where adults are expressing concerns about long-term implications of text messaging on academic success or relationship abilities, some research shows texting is more characteristic of a life phase than it is a reflection of a cohort effect (Ling, 2010); meaning this is a behavior that is simply characteristic of being a teenager. This supports the idea of a youth culture of text messaging which is influencing social development, particularly adolescent perceptions and behaviors.

Interestingly, many studies examining text messaging behaviors rely solely on data from college samples. On average, college students are no longer as fully engaged in text messaging (Tulane & Beckert, 2011) nor are they experiencing the major social implications of texting as are the adolescents who are shaping and experiencing the youth culture of texting. Furthermore, although some research is available, there is a lack of

research regarding the developmental impacts of text messaging on social relationships and practices for adolescent populations.

The purpose of this study was to pursue an understanding of social impacts of text messaging on adolescents. Important aspects include reports of text messaging behaviors in relationship formation and social settings, perceptions of text messaging behaviors in relationship formation and social settings, potential impacts of text messaging on face-to-face communication, and adolescent views of adult perceptions of text messaging. This study used a social cognitive theoretical perspective to examine both qualitative and quantitative data in order to gain a more complete understanding of the social implications of adolescent text messaging.

CHAPTER II

LITERATURE REVIEW

Theoretical Framework

Bandura (1986) proposed a theory of social cognition in which behavior, cognition, personal factors, and environmental events interact to impact development. Through this theoretical lens, learning is not simply a result of individual determinants, but also a reflection of observation and modeling. Individuals learn from observing behaviors as well as the consequences of the behaviors of others. These observations have the potential to influence behavior, judgments, and general rules for behaviors (Bandura, 1986).

Individuals are not just modelers of behavior, however. They have the ability for self-regulation and self-reflection (Bandura, 2009). Self-regulation consists of internal standards used to evaluate actions and abilities towards self-direction. Self-reflection is used to evaluate thinking and gain understanding (Bandura, 1986).

A component of social cognitive theory concerns learning rules and strategies regarding behaviors, as well as situations in which behaviors are appropriate (Smetana & Villalobos, 2009). According to social cognitive theory, individuals are influenced by internal standards to evaluate personal behaviors and thoughts (Bandura, 2009), as well as the behaviors of others.

Bandura (2009) suggested that understanding the influence of social communication, particularly the media in society, and its influences on cognition, emotion, and behavior is important. Texting is a type of social communication which

impacts thought, emotion, and behavior. Social cognitive theory can also be used to understand external influences and the meanings given them by individuals (Bandura, 2009). As mentioned, behavior, environment, and personal determinants are all used to understand cognitive and behavior processes (Bandura, 1986). This is where social cognitive theory is particularly useful in understanding text messaging, and the way it is affecting adolescent sociality. Adolescent social life is multifaceted. Texting is a part of the environments of daily social interaction for teenagers and also is influencing teenagers' behaviors and perceptions.

Texting and Social Life

Texting could very well be changing the face of adolescent social life (Bryant et al., 2006). Adolescents who receive text messages report feeling an affirmation of their social network (Cupples & Thompson, 2010). Furthermore, text messaging is one form of communication in which individuals feel they have control to think about responses (Madell & Muncer, 2007).

Adolescent social networks are being formed through text messaging. Ling (2005) proposed that text messaging is providing adolescents with an enriched social experience, as it is used to organize and connect peer groups. Berg and colleagues (2005) used ethnography and field studies to examine the social behaviors surrounding text messaging in six adolescents between the ages of 16 and 19. Through observations, the authors found that adolescents use texting to solidify social networks. Some teenagers would write their text messages together or pass phones to read one another's texts, which sharing was associated with an increase in intimacy in the relationship.

Reasons for Texting

Adolescents report many reasons for choosing to communicate through text. Text messages are used for coordinating social activities, asking simple questions, inquiring about others' locations, telling jokes, sending greetings, or providing updates about personal life events (Ling et al., 2005). Text messages are often used to maintain social relationships, and most messages are relational in nature (Holtgraves, 2011).

As noted, many social reasons exist for texting. Indeed, texting has become an integrated component of adolescent daily social living (Lenhart et al., 2010). Currently, more than half of American adolescents send text messages daily (Lenhart, 2010). In a qualitative study of 30 university students, participants reported that texting was important for their everyday social lives (Harley et al., 2007). In fact, participants used texting as their most frequent form of communication to maintain relationships with friends and family members and to maintain social connectivity in general (Harley et al., 2007).

Social Rules and Texting

As has happened with all forms of human communication, teens have begun to develop rules about text messaging (Crystal, 2008). Some rules are based on the actual communication and some are based on location of communication. For example, Laursen (2005) examined 511 text messages from 287 texting conversations of six 14-year-olds (3 girls, 3 boys). She found that the expected behavior of the recipient of a text message was to reply. When replies were not received, some adolescents would send the original message again, some would check in with a follow-up questioning message, and

some would send a second message clarifying the first. Laursen (2005) also found that there were certain types of texts which did not require a reply such as “good night” text messages, a forwarded chain message, or a message that was sent following an actual phone call.

Some rules surrounding adolescent text messaging, and communication via cell phone, are based on the location of the texter. For example, adolescents will use texting when it would be rude to talk on a cell phone or when talking on a cell phone is prohibited (Lenhart et al., 2010). In situations in which a voice conversation would not be acceptable, such as in a movie theater or when recipients do not wish to be overheard by present company, text messaging can be utilized to maintain privacy and not cause a disturbance (Pettigrew, 2009). In other situations, established rules about texting are ignored or perceived as unimportant. For example, adolescents report frequently texting during academic classes even though schools have policies limiting or banning cell phones or cell phone use (Lenhart, 2010).

Rules for texting are not based solely on a physical situation but are also based on relationships. For example, parents and adolescents establish rules about communication in certain situations. Williams and Williams (2005) used 36 qualitative interviews with parents with an adolescent between the ages of 15 and 16. The researchers found that parents and children keep open communication through texting. Parents and children also can identify situations in which texting each other would be more appropriate than calling on the phone.

Adolescents also establish rules about understanding interpersonal relationships, including dating, through text messaging. Using peer-led focus groups as well as

research-led focus groups, Cupples and Thompson (2010) examined relationship formation and maintenance for a small group of heterosexual females. Participants indicated text messaging was a preferred way to easily get acquainted with someone without awkwardness. In addition, these researchers found that texting was a medium through which girls could appropriately express interest in boys while still maintaining social scripts of boys leading relationships. Participants also indicated that they could decipher cues about the relationship based on text messaging behaviors. For example, some participants noted that a text recipient may not be very interested in pursuing or further developing a potential romantic relationship when the recipient fails to respond to text messages.

Adolescents seem to have an idea about to whom it is appropriate to send messages containing “textese” (texting vocabulary including emoticons and abbreviations). Drouin (2011) found that college students are more likely to use textese in text messages and e-mails they send friends, and are less likely to use textese on a social networking site or in an e-mail to a professor. Drouin (2011) proposed the use of textese requires contemplation and is based on situations perceived as appropriate. In a sample of 80 college students, Drouin and Davis (2009) found that 75% of the respondents felt it was appropriate to use textese when communicating with friends compared to only 6% who felt textese was appropriate in communicating with instructors in a more formal format.

Within the context of rule-governed texting behavior, adolescents have established individual understandings of situations in which texting is acceptable. Adolescents use text messages to flirt, end relationships, remain in contact, and facilitate

social events (Lenhart, 2010; Oksman & Turtiainen, 2004; Srivastava, 2005). They also establish rules about what is appropriate concerning text messaging. Using a social cognitive theoretical perspective, adolescents may be forming their social rules based on observations of others as well as self-evaluation and internal standards (Bandura, 2009). Social cognitive theory also can be used to examine situations in which behaviors are acceptable (Bandura, 2009). Understanding perceptions of social rules regarding texting in connection with actual texting behaviors gives a deeper understanding of the social cognitive process surrounding text messaging. Further investigation is needed to determine more clearly how perceptions of texting behaviors relate to actual texting behaviors.

Youth Culture

There is a youth culture surrounding text messaging. Oksman and Turtiainen (2004) conducted 168 interviews with adolescents under the age of 18 examining adolescent text messaging. The authors found that adolescents and adults use cell phones for different reasons. Adolescents have built a youth culture through texting. Often this youth culture is invisible to adults. Oksman and Turtiainen (2004) suggested this youth culture impacts communication patterns and the way adolescents construct their perceptions of the world. For example, cell phones allow adolescents to carry their social networks with them. Texting is a quiet way for adolescents to address their social network without bothering others or involving adults in their social communications (Oksman & Turtiainen, 2004).

As mentioned, this youth culture of text messaging is one that adolescents understand. Adolescent social experiences are building the youth culture surrounding text messaging. Text messaging, as a form of communication, is building the youth culture. Through a social cognitive theoretical lens, the construction of the youth culture surrounding texting can be understood as adolescents develop rules for communication, establish internal and external standards for understanding behaviors, and as adolescents observe the behaviors of others who are also developing the youth culture.

Imaginary Audience

One theoretical viewpoint pertaining to adolescent social perceptions and public social behaviors is the imaginary audience. The concept of imaginary audience is that adolescents believe that everyone is watching and evaluating their actions (Elkind, 2007). Elkind (1979) noted that this imaginary audience is constructed of actual individuals who are physically present in the everyday interactions of adolescents. As adolescents gain greater cognitive abilities, they assume that others who see them are as interested in their behaviors and appearance as is the adolescent. Furthermore, as an adolescent develops, preoccupation with self increases and the concept of imagining everyone in physical proximities as an audience intensifies.

Elkind (1979) believed that the influence of the imaginary audience peaks in middle adolescence and that young people, in particular, are either playing to the audience or shying away from it. This concept is evident in text messaging behaviors of young people. As indicated earlier, adolescents often send text messages in social situations. Holtgraves (2011) conducted a study of 224 college students, ages 18 to 41, in

which they wrote down the last 20 text messages they sent from their phone. Participants included information about circumstances surrounding sending the message, such as where they were located, as well as the relationship the sender had with the recipient. Most of the messages were sent to friends and were sent in social situations with others present. This study did not explicitly address imaginary audience but is an example of private text messages taking place in social situations with others present.

As illustrated, adolescents send and receive text messages in the presence of their peers, which is a visible display of social connection. Cupples and Thompson (2010) reported that when adolescents feel they are observed in certain social situations, they pretend to send or receive text messages to provide a positive social appearance and an appearance of a social network. These behaviors may be a reflection of the adolescent's perceptions of imaginary audiences.

According to Elkind (1979) the construct of imaginary audience develops as adolescents develop capacities associated with formal operations including abilities for metacognition. Although an ability to think about thinking develops, many adolescents fail to realize others' thoughts are not similar to the primary thoughts of the adolescent, which thoughts are often egocentric in nature. Adolescents may be performing to an imaginary audience constructed of those individuals who are physically surrounding them in social situations in which they text. The pervasiveness of text messaging in adolescent social life, coupled with the tendency of adolescents to be cognizant of an imaginary audience, requires further inquiry into the reasons adolescents pretend to text.

Texting and Communication

Similar to face-to-face communication, texting consists of exchanges and conversations, with two people generating communication and replying to one another (Laursen, 2005). Adolescents often use texting in forming relationships because it provides a safer communication atmosphere than does face-to-face interaction (Lenhart et al., 2010). In a survey of 197 college students, all of whom had cell phones, the frequency of text messaging was found to be negatively related to the length of a relationship (Jin & Peña, 2010). Jin and Peña (2010) found that the frequency of text messaging decreased across the life of the relationship. They concluded that text messaging might be important in relationship formation more so than in relationship maintenance.

In a time diary study of 294 college students, researchers found that students spent the majority of their personal time in some form of communication (Hanson, Drumheller, Mallard, McKee, & Schlegel, 2011). Students spent, on average, 14.35 hours per week texting compared to 6.49 hours per week actually talking on the phone. The researchers noted that this finding is significant when considering the quantity of text messages that could be sent and received in only one hour.

The element of perceived privacy differentiates texting from other forms of communication. In a study examining 38 relationship dyads, Pettigrew (2009) found that within relationships texting was a venue wherein participants could have constant, private communication. Furthermore, Jin and Park (2010) surveyed 232 college students and

found that face-to-face interaction was a predictor for participants using their cell phones for more interpersonal reasons, including texting.

Texting has become the preferred form of communication for American adolescents (Lenhart et al., 2010). Many variables contribute to an adolescent's level of involvement in text messaging as a form of communication, such as gender and other demographic characteristics. Other variables which may contribute to text messaging as a preferred medium for communication, thereby impacting face-to-face communication, include academic and linguistic influences, texting behaviors and perceptions, and problematic forms of involvement with texting.

Demographic Characteristics

Gender differences in cell phone use and texting have received more empirical attention than any other demographic characteristic. In contrast, information about SES and ethnicity in association with texting behaviors in adolescence is quite limited. However, these variables should be given increased consideration due to their potential to contribute to understanding the level of involvement of adolescents with texting, as well as potential impacts of texting involvement on face-to-face communication.

Gender and texting. As with many other communication technologies, adolescent females are more immersed in texting for communication purposes than are males (Lenhart, 2010; Oksman & Turtiainen, 2004). Girls are more likely to text than are boys, with 86% of girls texting friends multiple times a day compared to 64% of boys (Lenhart, 2010). Females tend to send more text messages than do males (Madell & Muncer, 2004) with boys reporting an average of 30 texts per day and girls reporting an

average of 80 (Lenhart, 2010). High school-aged adolescent females (ages 14 to 17) are the most active group of adolescent texters in both sending and receiving text messages (Lenhart et al., 2010). In addition to sending more text messages than boys, girls' messages tend to be longer (Oksman & Turtiainen, 2004).

Regarding texting as a form of communication, females use texting more for social and relationship connections than do males. Females' text messages tend to contain more social words and pronouns than do males' (Holtgraves, 2011). Females also tend to use texting more for social purposes as well as topics such as school work (Lenhart et al., 2010). With this level of involvement in texting to communicate and build their social lives, adolescent females also report having more parental regulations over texting than do boys (Lenhart et al., 2010).

Age, SES, ethnicity. Time spent using the cell phone to text increases with age during adolescence (Rideout et al., 2010). Older adolescents are more likely to text than are younger adolescents. Lenhart and colleagues (2010) found that 35% of American 12-year-olds text daily, 54% of 14-year-olds text daily, and 70% of 17-year-olds text daily.

Lenhart and colleagues (2010) found that adolescent text messaging does not vary by socioeconomic status. They also found that American White teenagers send and receive an average of 50 texts per day, Black teenagers send and receive an average of 60 texts per day, and English-speaking Latino adolescents send and receive an average of 35 texts per day. Livingston (2011) also found slight differences among American ethnic group adults 18 and older in text messaging: 55% of Latinos, 61% of Whites, and 61% of Blacks sent text messages daily.

Academic Performance

Scholars argue about the impacts of texting on academic and linguistic abilities. Some believe text messaging is harming academic performance. Coe and Oakhill (2011) found that poor readers spent more time texting daily, and had cell phones at younger ages than the participants who performed well on measures of reading ability. Others feel that texting improves school engagement as students use text messaging to gain more information about school (Harley et al., 2007).

In the United States, the media and parents alike have expressed concern over the impact of adolescent texting on proper and communicative English (Thurlow & Bell, 2009). Powell and Dixon (2011) used a sample of 94 undergraduate college students with an average age of 24.4 ($SD = 8.7$ years) to examine the impact of textese on standard spelling. Contrary to parental belief and media portrayal, they found exposure to textese had a positive impact on their sample's spelling abilities.

Other researchers have examined the relationship between textese and individuals' reading abilities. Coe and Oakhill (2011) examined 41 ten- and eleven-year-olds' speed with reading messages which were written in textese compared to those written in formal English. All of the participants took more time to read the messages which were written using textese than those written in standard English. The researchers proposed that textese might save time in writing messages, but not reading messages. Interestingly, the researchers did not find a relationship between the amount of texts sent and literacy skills of their participants.

Texting has become a functional medium that may move beyond social messaging and actually be used to improve school engagement. Some studies exploring

the relationship between texting and school engagement have been conducted with college samples. Harley and colleagues (2007) found that university students use texting to maintain contact with family members and for practical issues such as checking and understanding school requirements. Consistent with findings from university students, adolescent texting is not limited to social purposes but is also used to find out information about school work (Lenhart, 2010).

Thompson and Cupples (2008) qualitatively examined the responses of six focus groups of participants between the ages of 11 and 18. For these participants, the majority of texts were sent to people with whom they communicated during school. The researchers found that instead of destroying face-to-face contact with others, text messaging was building contact and social networks. This research further supports the idea that text messaging is actually enhancing adolescents' face-to-face relationships.

In light of concerns that texting is impacting face-to-face communication abilities through academic performance and linguistic factors, it is important to examine actual texting behaviors in relation to face-to-face communication. Through social cognitive theory, both the behavioral aspects of academic performance and environment of texting practices and perceptions can be used to understand the developmental impacts of text messaging.

Texting Behaviors and Perceptions

Texting behaviors and perceptions may also have an impact on adolescent face-to-face communication. Some of the impact of texting behaviors on face-to-face relationships has been examined through peer relationships. Adolescent social

development is characterized by increasing involvement with peers. This increased involvement is reflected in text messaging behaviors, as well. The majority of teens send text messages to their friends on a daily basis. Lenhart and colleagues (2010) found that 81% of American teens with the capability to text choose to text their friends daily. This finding supports those of Berg and colleagues (2005) that texting is associated with increased interaction among peer networks as well as enhanced intimacy among friends.

Face-to-face interactions contribute to texting relationships and the reciprocal is also true. In a study of 200 university students between the ages of 17 and 24, researchers found that extroverts, those with great depth and intensity in their interpersonal relationships, reported using text messaging more than other participants (Ehrenberg, Juckes, White, & Walsh, 2008). These researchers suggested this may be a reflection of extroverts' desires for social interactions. In a study of 182 university students, Auter (2007) found a strong positive correlation between using non-voice call features of phones, including texting, on evenings and weekends with participants' willingness to communicate in face-to-face situations. Auter (2007) proposed this could have been a reflection that those who are willing to communicate in groups also enjoy utilizing features such as texting on their phones.

Texting behaviors may be enhancing adolescents' desire to communicate in face-to-face interactions. Through a social cognitive theoretical lens, the impacts of texting on face-to-face communication may be further understood by examining actual adolescent perceptions and behaviors. This theory is particularly useful since development can be understood by examining personal, cognitive, behavioral and environmental contributors (Bandura, 1986). Behaviors, perceptions, and environments include social situations in

which texting is understood as acceptable and appropriate, as well as actual texting behaviors.

Negative Implications of Texting Behaviors and Perceptions

It is important to note that texting might not enhance face-to-face communication for all adolescents. Those who prefer to text more than communicate in other modalities might be more anxious and lonely. Reid and Reid (2004) used a sample of 982 respondents, with an average age of 23.8 years, to examine the difference between texters (those who prefer texting on cell phones) and talkers (those who prefer talking on cell phones). In Reid and Reid's (2004) study, texters tended to be lonelier and more socially anxious than talkers, a result which approached statistical significance. Furthermore, texters tended to form "text circles" (p. 1) which consisted of friends who were in constant contact through text messaging.

Some researchers propose that addictive tendencies associated with text messaging exist (Rutland, Sheets, & Young, 2007; Walsh, White, & Young, 2008). Aoki and Downes (2003) used both qualitative and quantitative methods to study college students and their experiences with cell phones in general. The researchers found that as the participants reported using their cell phones regularly, the cell phone became so integrated into their lives that they "felt lost without it" (p. 357). This concept has been extended from cell phone use in general to text messaging. Walsh and colleagues (2008) held focus groups with 32 participants between the ages of 16 and 24 to examine emotions associated with text messaging. They found that thoughts of cell phones, specifically whether or not the participants had received a call or a text message, had the

ability to override the participants' current thought pattern. In fact, some participants reported euphoric feelings upon the receipt of a text message.

In summary, adolescents use text messaging in their social relationships for various reasons. Reasons for choosing to text as a form of communication can be both positive and negative. Some adolescents are drawn to texting based on the opportunity for private communication within a relationship. For some, it enhances their face-to-face relationships. Some individuals who prefer to text over other forms of communication have tendencies towards anxiety and loneliness. Others demonstrate addictive tendencies towards texting.

Clearly, text messaging as a daily and pervasive form of communication is impacting adolescent communication. What remains to be understood is how adolescents' willingness to communicate in face-to-face situations is associated with adolescent texting behaviors and perceptions.

Adult Perceptions of Texting

Parents and Text Messaging

Adolescent sociality is also impacted by family relationships, especially by parents. During adolescence, many teenagers desire to exercise autonomy, but still must navigate relationships with their parents (McElhaney, Allen, Stephenson, & Hare, 2009). The cell phone, specifically text messaging, has been described as a "symbolic umbilical cord" (Ling, 2005, p. 175) for connection between adolescents and their parents. Yet, adolescents see it as a device that is enhancing opportunity for autonomy (Blair & Fletcher, 2011).

Few adolescents between the ages of 8 and 18 have rules about text messaging from their parents. Rideout and colleagues (2010) found that 27% of American adolescents have rules about the amount of time they can talk on the cell phone, while only 14% have rules about the number of text messages they are allowed to send.

Adults and adolescents have both perceptual differences and commonalities regarding text messaging. Understanding the complexities of this phenomenon is challenged by the vast contrasts within and between the two populations of adults and adolescents. At one extreme, some adults view texting as a complete waste of time (Cupples & Thompson, 2010). This view is often accompanied by the difficulty many adults have with working texting into their day-to-day social interaction. Adolescents, on the other hand, have a much easier time working texting into their social lives than do adults (Bryant et al., 2006).

Commonalities in opinions about texting between adults and adolescents also exist. Both parents and adolescents agree that cell phones are important as safety measures, and help adolescents to keep connections with family and friends (Lenhart et al., 2010). Some parents even observe cell phones as facilitators of increasing social status for adolescents (Blair & Fletcher, 2011).

As mentioned earlier, a youth culture surrounds adolescent text messaging (Oksman & Turtiainen, 2004). This youth culture is often invisible to adults. As this youth culture develops further, adolescents and adults see different values in texting. Yet adults are not completely disconnected from understanding this youth culture. Many adults are beginning to understand the benefits of texting that adolescents perceive. For example, Lenhart and colleagues (2010) found that 84% of adolescents between the ages

of 12 to 17 enjoy using text messaging to quickly change plans, compared to 75% of their parents.

Some adult involvement in texting can be beneficial for adolescents. Parents' limiting and monitoring of text messaging has been found to have positive effects on their adolescents' texting behaviors, such as decreasing both the likelihood of adolescents sending "sexts" (sexually suggestive messages or picture messages), and the likelihood of teens reporting having sent regretful text messages (Lenhart, 2010).

Some researchers suggest that parental authority boundaries are changing through cell phone use (Williams & Williams, 2005). For example, two-thirds of parents indicate they have taken away cell phones as a punishment (Lenhart et al., 2010). Unfortunately, this punishment creates a problem for parents by eliminating the option for continual contact with adolescents who are otherwise constantly available through cell phones (May & Hearn, 2005). In a national survey of parents and teens, Lenhart and colleagues (2010) found that 98% of parents indicate that their adolescents possess cell phones so parents can contact them regardless of where the adolescent is located. However, many adolescents do not enjoy the option of constant availability to their parents (Lenhart, 2010). In a study of parents and teenagers, Williams and Williams (2005) found that parents are extending their presence into adolescent space by tracking their whereabouts and behaviors through text messaging. "Texting is itself an interesting illustration of a negotiated compromise between parent and child since it allows the parent to have a presence without direct communication" (Williams & Williams, 2005, p. 326).

School Administrators, Teachers, and Text Messaging

Adult concern over adolescent text messaging extends beyond the home. School administrators and teachers are also concerned about student texting behaviors. Many schools ban or restrict cell phone use on school property, yet adolescents still report using their cell phones to text during classes (Lenhart et al., 2010). Even students on the college level report texting during class. In a study of 228 university students' in-class texting behaviors, participants reported texting in class even when their teachers were actively engaging the class (Wei & Wang, 2010). Engagement was based on teachers' immediacy behaviors, or abilities to demonstrate closeness and maintain student attention through verbal and nonverbal cues. The researchers concluded that text messaging during class might be a reflection of the habitual nature of texting rather than a reflection of a teacher's ability to engage students. The researchers noted many limitations to their study, including the fact that it was conducted at a university which did not have a policy of banning phones during class. The researchers suggested that having a policy and consequences in place may decrease likelihood of texting during class.

In summary, adults express many concerns regarding adolescent texting behaviors. Some adults are concerned about text messaging impacting adolescents' school performance. Some adults report that parenting itself is changing in connection with text messaging. In general, adults express both negative and positive opinions about adolescents' texting. Through social cognitive theory, adult concerns over texting can be examined from an adolescent perspective, as adult perceptions are observed and processed by adolescent texters.

Constructing Spaces

Adolescents are negotiating relationships with parents and other adults concerning text messaging while building spheres of public perceptions and private communication. The cell phone is not tethered to a space, but provides communication that functions without a specific space. Furthermore, when a cell phone is used in a public place it requires one to juggle multiple spaces (Garcia-Montes et al., 2006). For example, an adolescent could be at home in a family shared space, yet be negotiating a private sphere by texting a peer. Or an adolescent could be with a group of friends negotiating a public space and use a cell phone to connect to another public sphere of peers through text messaging. As previously noted, many adolescents prefer to text because it is private communication and they feel they can get to know someone faster and better. The use of text messaging is a way for adolescents to construct non-threatening spaces in which they are taking less social risks compared to face-to-face interaction (Cupples & Thompson, 2010).

An interesting aspect of texting is the requirement for adolescents to function within private and public realms. Adolescents can use texting to maintain a private connection, but they are also avoiding public regulation by adults and parents. Texting is a means adolescents use to avoid adult surveillance (Thompson & Cupples, 2008), as evidenced by adolescents texting during all hours of the day including texting late into the night (Srivastava, 2005). In a study using video ethnography of one teen participant, Tutt (2005) examined the adolescent's use of the cell phone in daily life. Tutt (2005) found that using text messaging was a way for the participant to remain connected with a peer group while still interacting with family. This required the participant to understand

and utilize spaces, because the use of text messaging in the presence of family led to the family becoming involved in the private sphere.

In summary, many adults have a negative perception of adolescent text messaging behaviors. Yet, adolescents are not experiencing negative impacts on language or reading that has concerned adults. Furthermore, some adults and adolescents share beliefs about benefits and purposes of text messaging. It is important to explore how adolescents interpret adult misconceptions about adolescent texting behaviors. Through social cognitive theory, this can be examined through adolescents' internal standards concerning text messaging in comparison to their perceptions and observations of adults' behaviors and perceptions regarding text messaging.

Summary

Texting is becoming a key influence in shaping the modern adolescent social experience. Similar to other forms of communication, adolescents have established rules about texting based on relationships and physical setting. Texting may principally be a private form of communication, yet visible indicators of such communication exist as individuals text on devices in multiple and varied public spheres.

As texting has become a common aspect of adolescent social life, adolescents face concerns from many adults about the potential impacts texting may have on adolescents' communication and social abilities. Adolescents have constructed a youth culture around text messaging that some adults do not perceive or understand. Through social cognitive theory, the social nature of adolescent text messaging can be examined and understood in the multiple contexts in which adolescents communicate. This

theoretical perspective also can assist in understanding the multiple relationships, perceptions, and social rules that texting messaging impacts.

It is important to note that many studies conducted examining text messaging behaviors have focused on college populations. However, high school-aged populations are those who are texting the most (Lenhart et al., 2010). The purpose of this study was to pursue an understanding of social impacts of text messaging on adolescents. With this population in mind, the current study employs a sample of high school-aged adolescents to seek answers to explore the following research questions:

1. How do adolescent perceptions of texting behaviors relate to actual texting behaviors?
2. Why do adolescents pretend to text?
3. How is adolescents' willingness to communicate in face-to-face situations associated with texting behaviors and perceptions?
4. What do adolescents perceive about adult misconceptions of texting behaviors?

CHAPTER III

METHODS

Data used in this study were collected previously by a professor at Utah State University as part of a larger project designed to assess psychosocial development and text messaging behaviors. The process of data collection is outline below.

Research Design

This study was developed using mixed methodologies. Because of the novelty and complexity of adolescent text messaging, a mixed methods research design was chosen in order to obtain a more complete understanding of social aspects of adolescent text messaging. This research used the mixed methods typology of completeness as outlined by Bryman (2006), in that its purpose was to provide a more comprehensive examination of the social aspects of adolescent text messaging than has been provided in previous research using both qualitative and quantitative methodologies. The use of both exploratory and descriptive research provided a more complete picture of social components of adolescent text messaging.

This study used independent interaction between quantitative and qualitative strands (Creswell & Plano Clark, 2011), in which the quantitative and qualitative questions were analyzed separately. Both the quantitative and qualitative questions hold an equal priority in understanding aspects of adolescent social life impacted by text messaging. Mixed methods, as a research design, were employed during the design stage of the research process for this project, both during exploration of the totalities of texting

as a component of adolescent sociality, and as part of the survey formation. Both quantitative and qualitative questions were included on the survey. Methodology mixing also occurred in the interpretation of results because both the quantitative and qualitative components added to the further understanding of the social impacts of adolescent text messaging.

Procedures

Two school districts were contacted to gauge interest in a study about adolescent text messaging. One district superintendent agreed to participate, and the proposed study progressed to the district's research supervisor. The high school was located in an urban area in a western state. A research assistant formatted the survey to meet the research supervisor's designation for student participation. The district research supervisor then contacted the high school administrators in the district to request participation. One high school principal responded affirmatively.

Participants at the cooperating high school were enrolled in various information technology courses. In accordance with IRB requirements, one week before surveys were administered, students in the participating classes were given parental declination forms and asked to return the form if parents did not desire their students to participate in the study. No forms were returned. On the day of survey administration, students were also reassured that survey completion was not mandatory.

Surveys were administered on two occasions, once in the fall semester and once in the spring semester. Both survey administration times were near the end of the school semester. One reason for using the information technology courses was to ensure that all

participants had access to a computer to complete the online survey. The surveys were in a digital format, linked to a Utah State University department web page, and password protected. Students were given time at the beginning of their class periods to complete the 15-minute survey. A research assistant attended each class period to be available to answer any student questions and provide additional instruction. No questions arose, and no additional instructions other than those to explain survey access were required. All students who were mentally capable completed the survey during class.

Measures

The survey contained 74 questions and consisted of demographic information, items examining texting behaviors, and four measurement scales. Only the demographic information, texting behaviors, appropriateness scale, acceptability scale, and *Willingness to Communicate Scale* were used for this study. The appendix contains the entire survey used for this study. A description of each section of the survey follows.

First, demographic information gathered included ethnicity, gender, year in school, current GPA, and family income level. Next, items were included regarding texting behaviors including cell phone ownership, texting options on the cell phone, and cell phone preferences and uses. Participants were asked how they preferred to use their cell phones (text, call, both), how many contacts were in their cell phone phonebook, average number of texts sent in a day, number of people texted in a day, number of texts sent in a month, and self-classification of texting level (light texter, medium texter, heavy texter). Other texting questions included reasons for texting, cell phone use in school, and opinions of texting in school. Participants were also asked a closed-ended question

inquiring if they had ever pretended to text, with a follow-up, open-ended question for participants to provide details about pretending to text. A similar question set was included about not responding to text messages. Participants were then asked an open-ended question regarding their thoughts on potential adult misconceptions of text messaging.

The next portion of the measure was constructed during a master's thesis project supervised by the professor who collected the data (Davis, 2009). This portion of the survey is divided into two measures and includes items concerning the appropriateness and acceptability of texting behaviors in various social situations. These scales were presented at different points in the survey. First, the survey items about appropriateness of texting were asked as actual texting behaviors to see if participants engaged in these texting behaviors. Later the acceptability scale was used. Following two other scales, the appropriateness items were presented once again, this time as a scale of the appropriateness of the behavior.

Acceptability. Items measuring acceptability of texting behaviors included an examination of common contexts in which adolescents participate. Six items were included on the survey to assess acceptability. These included the acceptability of texting during class, texting during religious services, texting at work, texting while hanging out with friends, texting while engaged with someone else in a face-to-face conversation, and the acceptability of texting during dinner. Items were measured on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Scores from this sample of all six items together had a Cronbach's alpha of .68. Because research on texting is still exploratory and this scale is still in formation stages, an alpha value around .70 would be

appropriate (Nunnally & Bernstein, 1994). Scores from this sample support the face validity of the scale, in that it appeared to be measuring the acceptability of texting behaviors. Because texting is a relatively new phenomenon, criterion validity and construct validity could not be examined.

Appropriateness. Items measuring the appropriateness of texting behaviors included social behaviors that involve communication in relationships. Seven survey items examined perceptions of the appropriateness of texting behaviors, including social behaviors associated with texting. The following survey items examined the appropriateness of texting: asking someone for a date, accepting an invitation for a date, asking for a formal date, accepting an invitation for a formal date, asking for a steady relationship, breaking up with someone, and texting someone who is not well known to the texter in order to get to know the individual better. These items were measured on a scale from 1 to 10, where 1 indicated inappropriate perceptions of the behavior and 10 indicated appropriate perceptions. Scores from this sample of all seven items together had a Cronbach's alpha of .89. The scale had face validity and appeared to measure the appropriateness of texting behaviors. Because texting is a relatively new phenomenon, criterion validity and construct validity could not be examined.

Willingness to Communicate Scale. The final portion of the survey measured respondents' willingness to communicate. The *Willingness to Communicate Scale* was developed to measure individual's likelihood of avoiding or engaging in communication in face-to-face situations (McCroskey, 1992). The scale originally consisted of 20 items—12 items examining communication and 8 filler items. An example of a filler item was, "talk with a salesperson in a store." In the original scale, participants would fill

in a percentage of how likely they would be to communicate in the various situations ranging from 0 to 100%. Scores were further broken down based on communication contexts (group discussion, meetings, interpersonal conversations, public speaking) as well as the types of individuals (strangers, acquaintances, friends) with whom communication takes place. McCroskey (1992) reported that over multiple studies, internal reliability of scores ranged from .86 to .95, indicating very strong reliability.

For this study, the scale was modified due to survey length constraints placed by the school district. The survey was decreased to 10 items. In addition to eliminating all the filler items, the district wanted two content items eliminated. No specific items were selected by the district for elimination so, after careful consideration, the items “talk in a large meeting of acquaintances” and “talk in a large meeting of strangers” were chosen for exclusion. These items were eliminated based on the location (meetings) of the communication in which adolescents would be less likely to attend. They were also eliminated based on the individuals (acquaintances and strangers) examined through these items, since adolescent communication would be more likely to occur with a friend. The scale was also changed to match other portions of the survey by adjusting the original percentage range to a numerical range from 1 to 10. This scale was used to sum the 10 items on a scale of 1 to 10, resulting in a percentage to assess the participant’s overall willingness to communicate. Students indicated their comfort level with communicating with 1 being very uncomfortable and 10 being very comfortable. For the scores from this sample, there was a reliability of $\alpha = .91$, which is consistent with past reports of reliability for scores on this scale (McCroskey, 1992). Even though changes

were made, the scale still appeared to measure willingness to communicate in face-to-face situations.

Participants

Over the two semesters of data collection, a total of 256 participants completed the survey. There were 143 participants the first semester and 113 participants the second semester. The total sample consisted of male ($n = 128$) and female ($n = 127$) participants. The mostly senior ($n = 124$) respondents were accompanied by juniors ($n = 79$) and sophomores ($n = 51$).

Most of the sample were Caucasian ($n = 109$) or Latino ($n = 81$). There were also African American ($n = 8$), Asian ($n = 5$), and Native American ($n = 4$) participants. A portion of respondents ($n = 10$) identified themselves as “other” ethnicity. A large majority of the participants self-identified their family’s income as middle class ($n = 143$). Others identified their family income as upper class ($n = 7$) or lower class ($n = 66$). There were more female ($n = 113$) texters than male ($n = 104$) texters. Texters were still mostly seniors ($n = 114$), followed by juniors ($n = 61$), and sophomores ($n = 41$).

Qualitative Data Analysis

Research question two was answered using phenomenology. Phenomenology is a qualitative data analysis process of taking individual experiences and illuminating the shared meaning or nature of the phenomenon of interest (Creswell, 2007).

Phenomenology is meant to be used to examine the nature or the meaning of a construct (van Manen, 1990). van Manen (1990) also discussed phenomenology as a way of

describing what is in an experience without preconceived or theoretical propositions.

This was a pertinent research technique to use with adolescents who are currently experiencing the phenomenon of texting, and it is impacting their daily social experiences. It was also selected because where it is noted adolescents pretend to text, there is no theorizing available about why they choose to pretend to text. This research technique was used to give a voice to the current experience of adolescents without preconception on the part of researchers.

van Manen (1984) suggested two processes for data analysis with a phenomenological approach: the highlight approach and the line-by-line approach. The highlight approach requires responses be read multiple times, and the line-by-line approach requires researchers to examine every sentence to best understand how it relates to lived experience. Both processes are suggested to fully understand common themes in participants' lived experiences. van Manen (1990) also noted phenomenology is both a descriptive and an interpretive process.

This question was asked to participants first as a yes/no question, asking whether or not they had ever pretended to text on their phones. A follow-up qualitative question was asked prompting the participants to explain if they ever had pretended to text. Response boxes for qualitative questions were larger, and had space enough for unlimited data entry. Phenomenological analysis was chosen for this data, since the respondents were not loquacious in explaining their experience of pretending to text, but supplied multiple reasons within one response for choosing this behavior.

The researcher and a fellow graduate student analyzed the data using the highlight and line-by-line approach. Researchers both took the data and read through it

completely. They immersed themselves in the data, reading and re-reading until potential themes emerged. They then met to discuss potential themes which presented themselves within the data.

Data were triangulated using inter-rater reliability, member checking, and theoretical application. Inter-rater reliability was calculated at 93.5%. A variation of member checking was used. Members of the adolescent population read the results to verify accuracy in interpretation of the adolescent experience. District restrictions prevented contact with the actual sample members for this process. Finally, results are interpreted with the use of theory in the discussion section.

Research question four was answered using general qualitative data analysis techniques as outlined by Bogdan and Biklen (2003). These procedures required researchers to read and re-read the data to gain a totality of the data. Coding categories were developed and refined based on patterns in the data. This procedure for data analysis was chosen because the data were richer with more details provided than the previous qualitative question.

Participants were presented with an open-ended question asking if they thought adults had any misconceptions about text messaging and then invited them to explain their response. Two researchers read through the data and independently identified possible coding categories based on common themes within participant responses. Researchers came up with commonalities in the data. To increase the validity of the process, inter-rater reliability, member checking, and theoretical connections were used. Inter-rater reliability was calculated at 93.9%. Since members of the sample could not be reached, members of the population (adolescent high school students) were contacted to

examine the results of the data to verify that the data reflected an adolescent experience.

Finally, a discussion of theoretical application to the results is included in the discussion section.

CHAPTER IV

RESULTS

This research used mixed methodologies to examine the social experience of adolescent text messaging. Data were analyzed using both qualitative and quantitative methods. Quantitative data were analyzed using SPSS version 20. First, a descriptive analysis of the data was conducted. The first research question was addressed by examining the correlation between perceptions of the appropriateness of texting behaviors and actual texting behaviors. Phenomenology, a qualitative analysis technique, was used to address adolescent decisions to pretend to text. Hierarchical multiple regression was used to understand the relationship among texting behaviors, perceptions, and willingness to communicate in face-to-face situations. Finally, qualitative analysis techniques as presented by Bogdan and Biklen (2003) were used to examine adolescents' perceptions of adults' misconceptions of text messaging.

Descriptive Analysis

First, cell phone and texting behaviors were examined. Of the total participants, 221 (86.3%) possessed a cell phone, while 35 (13.7%) did not. Of those who possessed cell phones, 218 (98.6%) used text messaging on their cell phones and 3 (1.4%) did not. Data analysis only included participants who indicated that they used text messaging ($n = 218$). Nontexters are not included in any of the subsequent numbers reported or data analysis.

Texting participants were asked if they preferred to call, text, both equal, or use their phones for another purpose. Fourteen (6.4%) of the participants preferred to call, 93 (42.7%) preferred to text, 106 (48.6%) indicated they liked to call and text on an equal level, and 3 (1.4%) indicated they used their cell phones for other purposes. The majority of the participants indicated that they text friends ($n = 107$), boyfriends or girlfriends ($n = 82$), and family members ($n = 18$). A few indicated they text other individuals ($n = 8$), and only one participant indicated she texted classmates the most frequently.

Participants were also asked to self-identify as light, medium or heavy texters. There were 44 (17.2%) who identified as light texters, 117 (45.7%) who identified as medium texters, and 55 (21.5%) who identified as heavy texters. Texters were also asked how many text messages, on average, they sent in a day. This was correlated with texting level, and was associated at $r = .52$. They were also asked how many text messages they sent in a month. Participants indicated they sent between 3 and 75,000 texts in a month, with an average of 4,778 texts ($SD = 8192.72$) sent in a month. This was also correlated with participants' self-identified texting level. The variables were associated at $r = .23$.

The number of texts sent in a month was visually inspected to gain a better understanding of the distribution of the scores, as shown in Figure 1. Clearly, this was a skewed variable. There were two outliers that impacted the distribution of this variable. The first was the participant who indicated 75,000 texts per month, and the second one who indicated 50,000 texts per month. Both of these cases were further examined to determine if the responses should be eliminated completely from the data analysis as outliers. On the other survey items, neither participant appeared to provide questionable responses.

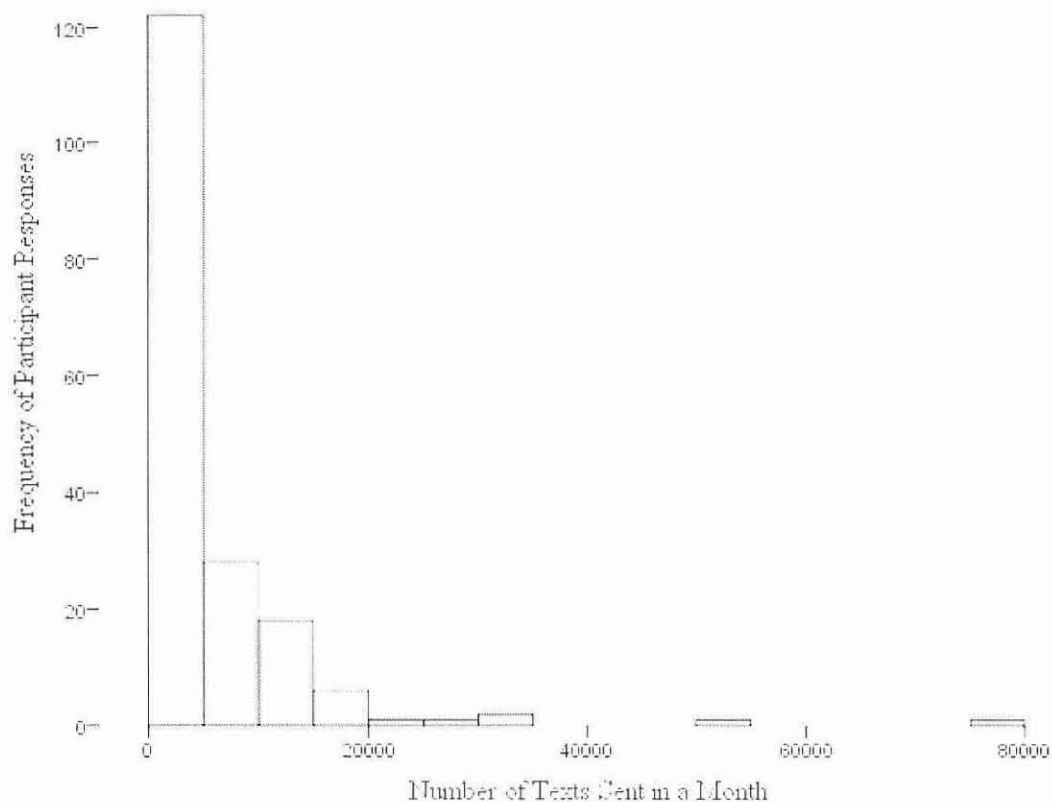


Figure 1. Participant self-report of number of texts sent in a month.

The frequency and percentages of social texting behaviors and means and standard deviations of texting perceptions were calculated. Table 1 contains the frequencies and percentages of participants' engagement in actual texting behaviors. Missing data ranged from 0 to 5. In four out of seven categories higher percentages of participants indicated they had not engaged in the specified behaviors through texting. These categories included asking someone for a formal date (82.1% had not used text messaging for this), accepting someone's invitation for a formal date (70.6% had not used text messaging for this), asking for a steady relationship (75.2% had

Table 1

Frequency and Percentages of Participant Social Texting Behaviors

Variable	<i>f</i>	%
Texted someone you didn't know but were interested in getting to know		
Yes	182	83.5
No	34	15.6
Accepted someone's invitation for a date		
Yes	152	69.7
No	65	29.8
Asked someone for a date		
Yes	107	49.1
No	111	50.9
Broken up with someone		
Yes	80	36.7
No	136	62.4
Accepted someone's invitation for a formal date		
Yes	59	27.1
No	154	70.6
Asked for a steady relationship		
Yes	53	24.3
No	164	75.2
Asked someone for a formal date		
Yes	37	17.0
No	179	82.1

not used text messaging for this), and breaking up with someone (62.4% had not used text messaging for this). Responses were most equally divided in the category of asking someone for a date, with nearly identical percentages indicating they had (49.1%) used texting to ask for a date, and that they had not (50.9%) used texting to ask for a date. In the remaining two categories, the majority of participants indicated they had engaged in the behaviors through texting. Those categories were accepting someone's invitation for a date (69.7% had done this with text messaging), and texting someone who was not well

known but the participant was interested in getting to know better (83.5% had done this with text messaging).

Table 2 and Table 3 contain the means and standard deviations of participants' perceptions of the acceptability and appropriateness of texting in various social situations. Measurement of the appropriateness of texting in social situations (Table 2) employed a 10-point scale ranging from 1 = inappropriate to 10 = appropriate. Measurement of acceptability of texting in social situations (Table 3) used a 5-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

For these high school respondents, perceptions of appropriateness were highest for asking for a date ($M = 5.27$, $SD = 3.03$), accepting someone's invitation for a date ($M = 6.09$, $SD = 2.96$), and texting someone one is interested in getting to know better ($M = 6.84$, $SD = 2.76$). The remaining four variables had mean scores lower than 5, indicating less favorable perceptions.

As seen in Table 3, the highest mean scores for the acceptability of texting in social situations were in the categories of texting while hanging out with friends ($M = 4.00$, $SD = 0.96$), and texting during class ($M = 3.16$, $SD = 1.00$), indicating more favorable perceptions of these behaviors. The remaining 4 categories had mean scores lower than 3, indicating less favorable perceptions of texting in those social situations.

In addition to examining texting behaviors and perceptions, an additional initial analysis of demographic characteristics was conducted since past research has not reported much information about ethnic differences or differences in SES and texting. Based on group sizes, a chi-square analysis was chosen to compare groups on texting behaviors and perceptions. No statistically significant differences presented in the

Table 2

Perceptions of the Appropriateness of Texting in Social Situations

Variable	<i>M</i>	<i>SD</i>
Texting someone you don't know well but want to know	6.84	2.76
Accepting someone's invitation for a date	6.09	2.96
Asking someone for a date	5.27	3.03
Accepting someone's invitation for a formal date	4.70	3.37
Asking someone for a steady relationship	4.19	3.28
Asking someone for a formal date	4.17	3.25
Breaking up with someone	3.54	2.97

Note. These items were measured on a scale ranging from 1 = inappropriate to 10 = appropriate.

Table 3

Perceptions of the Acceptability of Texting in Social Situations

Variable	<i>M</i>	<i>SD</i>
Texting when hanging out with friends	4.00	0.96
Texting during class	3.16	1.00
Texting at work	2.73	1.00
Texting during dinner	2.62	1.22
Texting during religious services	2.35	1.21
Texting during a face-to-face conversation	2.18	0.99

Note. These items were measured on a scale ranging from 1 = strongly disagree to 5 = strongly agree.

analysis when examining ethnicity in relation to average number of texts sent in a day, the average of perceptions of acceptability of texting, or the average of perceptions of the appropriateness of texting.

The same analysis was conducted based on participants' self-identified classification of SES. No statistically significant differences among the three groups in average number of texts sent in a day were found, nor in the average of perceptions of the acceptability of texting. However, a statistically significant difference in the average of

perceptions of the appropriateness of texting behaviors was found ($\chi^2 = 74.98, p < .01$). The differences in perceptions were between higher SES and lower SES participants, with lower SES participants having less favorable views of the appropriateness of texting behaviors compared to upper class participants. In sum, no statistically significant differences in texting behaviors based on SES or ethnicity were found, and only one statistically significant difference in the average perception of the acceptability of texting behaviors based on SES emerged.

Correlation Between Texting Behaviors and Perceptions

The first research question was how do adolescent perceptions of texting behaviors relate to actual texting behaviors? As documented in Chapter II, there is sufficient empirical support in the literature to allow directional hypotheses to guide the quantitative research questions in this study. The following hypothesis guided data analysis for this research question:

H1: There is a positive correlation between engaging in social behaviors through text messaging and viewing the social behaviors as appropriate and acceptable.

Analysis of this question used responses to items on the appropriateness portion of the survey. As mentioned, participants were asked their perceptions of the appropriateness of texting behaviors, as well as questions regarding whether they had ever engaged in the behaviors. Correlations between actual behaviors and opinions about the appropriateness of the behaviors were analyzed. A point-biserial correlation was used since questions regarding engagement in particular texting behaviors were asked as yes/no questions, providing a dichotomous variable. This was correlated with a

continuous variable that measured attitudes about the appropriateness of such behaviors on a scale from 1 = inappropriate to 10 = appropriate.

Correlational analysis of responses from these participants supported H1. Results from the analysis are reported in Table 4. All correlations were significant at the $p < .01$ level. There was a positive correlation between all of the perceptions of the appropriateness of texting variables and their associated actual practice variables. Correlations ranged from $r_{pb} = .23$ to $r_{pb} = .48$, indicating mostly moderate correlations (Cohen, 1977). The strongest correlations appeared between the following variables: perceptions of texting someone who is not well known but there is an interest in getting to know and the actual practice of using text messaging to get to know someone who is not well known but whom one is interested in getting to know ($r_{pb} = .48$), perceptions of accepting a date and having accepted a date through text ($r_{pb} = .36$), and perceptions of asking for a steady relationship and the actual practice of establishing a relationship through text ($r_{pb} = .36$).

Reasons for Pretending to Text

The second research question was why do adolescents pretend to text? As previously noted, adolescents choose to text for various reasons. Texting is a private form of communication, but it often takes place in public spheres. When someone sends or receives a text message, others can view an outward expression of their communication.

Table 4

Correlation Between Actual Texting Practices and Perceptions of Appropriateness of Texting

Variables	Asked for a date	Accepted date invitation	Asked for a formal date	Accepted formal date invitation	Asked for a steady relationship	Broken up	Texted to get to know someone
Asking for a date	.33						
Accepting date invitation		.36					
Asking for a formal date			.23				
Accepting formal date invitation				.28			
Asking for a steady relationship					.36		
Breaking up						.24	
Texting to get to know someone							.48

Note. All correlations are statistically significant at the $p < .01$ level.

These data were analyzed using a phenomenological approach. Researchers noted patterns in the data with commonly used words. The first word that stood out to both researchers was “avoid.” Participants used the word avoid in connection with communication, with social behaviors, with awkward or uncomfortable situations, and often used the word ignore. Next, the researchers noticed words that dealt with appearance. Participants used words such as “look,” “others might think,” and described social appearances. The final grouping of words researchers both had in their notes regarded safety. Participants described unsafe or risky situations and unease around unknown individuals. Researchers combined all of these commonalities from their notes and collapsed them into three major themes surrounding pretending to text: avoidance techniques, positive appearance, and perceived security.

Adolescents were first asked if they ever pretended to text. Of the total participants, 100 participants (46.1%) said they had pretended to text on their cell phones, compared to 117 participants (53.9%) who indicated they had never pretended to text on their cell phones. Of those who said yes, 49 were seniors, 30 were juniors, and 21 were sophomores. There were 61 females and 38 males in the group of those who had said yes, they have pretended to text.

The major themes and sub-themes are presented in order of prevalence. First, adolescents most commonly agreed that pretending to text was a technique for avoidance. Next, adolescents indicated that pretending to text was used as a method to maintain a positive appearance. Finally, adolescents shared the view that pretending to text provide a sense of security in situations they perceived to be unsafe.

Avoidance Technique

Adolescents in this sample commonly talked about how pretending to text provided a means for avoidance. These participants talked about avoiding several different types of interactions or states of being. Participants used words like, “awkward situations,” “bug me,” “ignore people,” “annoying,” and “boredom” to talk about the different things they were attempting to avoid. More specifically, some adolescents indicated they wanted to avoid interacting with other people, others indicated they pretended to text in awkward situations, and some expressed a desire to avoid themselves, or an inner state of boredom, by pretending to text.

Interaction avoidance. Adolescents felt pretending to text was a way to avoid conversation with others or being bothered by others. For some, the interaction avoidance was about avoiding individuals who were approaching them. For others, it was about avoiding interaction with people already in the room or area. Some adolescents felt that pretending to text could help them avoid people with whom they had been in relationships, and others were more general in their description of their experience of using pretending to text as an interaction avoidance technique.

Participants commonly stated that pretending to text was a way to avoid people who were approaching them who may have desired to engage in a face-to-face conversation. One participant said, “When you see someone you don’t like and he/she is coming toward you and if you pretend that you’re texting they might think you’re occupied on something important” (female, junior). Another participant reflected similar sentiments about avoiding someone that may potentially engage in conversation. He said, “I was going from one class to another and somebody that I didn’t wanna say ‘hi’

[to] was walking on my way, and then I just picked up my phone and started pretending I was texting or doing something else” (male, junior).

Some adolescents felt pretending to text was a way to avoid interacting with people they were required to associate with or who were already present in their social situations. Some indicated that they pretended to text because they did not want to continue interacting with people around them. For example, one participant said, “[I] didn’t want to talk to the person sitting next to me” (male, junior). Other adolescents talked about pretending to text in order to ignore people they did not like, and one participant said he pretended because he did not want to talk to his mother’s friends who were present (male, sophomore).

Participants in this study also agreed that pretending to text could be used to avoid people they presently had relationships with or people from previous relationships. For example, one participant said:

I was on break at work with an ex-boyfriend whom I had recently broken up with, and I didn’t want to talk to him. So, I pretended to text someone in between the time I was waiting for someone to actually text me back. (female, senior)

Some participants were more general in describing pretending to text to avoid interaction. It did not matter whether the interaction had potential to take place from an approaching individual or if it was to avoid someone in a current social situation. One participant described this thought by saying, “If you don’t want to talk to someone, then you can act like you are busy texting someone so they will leave you alone” (female, junior). Another participant expressed similar sentiments when she said she pretends to text, “. . . to avoid people who you don’t want to talk to. They will notice that you are busy, or they won’t even realize it is you because your head is down” (female,

sophomore). Some adolescents simply expressed they had the desire to be left alone and, therefore, chose to pretend to text.

Avoiding awkward situations. Many of the participants indicated they felt pretending to text was one of the best ways to get out of an awkward situation. Many adolescents were very brief in explaining their choice to pretend to text, simply suggesting they were doing it to avoid awkward situations. One participant said she pretended to text, “. . . to avoid the awkward conversations with the person near me” (female, senior). Some participants felt uncomfortable in social situations, and for them pretending to text felt like the best alternative in the situation. One adolescent said, “There was a very awkward silence and nothing was being said by anyone. I felt uncomfortable” (male, junior).

Self-avoidance. A few participants indicated that pretending to text was a way to address feelings of boredom, to avoid being alone with themselves. Some participants were brief and suggested boredom was the principle reason they chose to pretend to text. Participants also indicated in some circumstances that there was nothing else to do, so they felt that pretending to text was a way to pass the time. One participant said, “. . . because when I’m alone it gives me something to do” (female, junior).

Positive Appearance

Adolescents shared the perception that pretending to text could influence how their peers and others viewed them. For some of the adolescents in this sample, pretending to text was a way to maintain a positive social appearance. For example,

some did not want to appear like a “loser,” or wanted to look “cool,” whereas others wanted to appear as if they were engaged in a conversation through texting.

Positive status appearance. The majority of adolescents who talked about positive appearance were concerned with how they appeared to their friends. One participant said, “When you’re standing around alone and people might look at you like you’re a loner. So you pretend to text to make it seem like you are either waiting for someone or at least have friends” (female, senior). Similarly, another participant said she pretended to text when she was feeling, “. . . embarrassed or lonely, and don’t want to seem like a loser” (female, senior). One participant said pretending to text, “. . . makes me look popular. It looks like I really do have friends” (female, junior). Although pretending to text may have some positive influence on an adolescent status, one adolescent articulated how she felt when she pretended to text. She said:

When you are standing around, maybe waiting for someone. To other people you might look like a “loner” or without friends. So if you look like you are texting you don’t seem so bad, even though pretending to text is humiliating in itself.
(female, senior)

Positive conversation appearance. Some wanted to look like they were engaged in a conversation. One participant said she pretended to text, “. . . to look like someone is interested in talking to you.” (female, senior). One participant said pretending to text helped him appear engaged in a personal conversation, rather than appearing to be eavesdropping on another’s conversation. He said he pretends to text, “. . . to make other people think I was paying attention to my conversation rather than theirs” (male, senior).

Personal Security

For some participants, pretending to text was a way to feel safer in a situation which they had assessed to be potentially unsafe. This was the smallest theme and only a few participants mentioned this topic, but when it was mentioned participants were very specific. The majority of respondents who talked about personal security and pretending to text were female. For these adolescents, pretending to text was a way to appear connected and not alone. One participant said he pretended to text, “. . . when creepy people pretend to stand next to me and then touch my arm. That’s the best pretend texting time” (male, junior). One participant said she pretended to text, “. . . because my phone was dead and there was this car that was following me” (female, sophomore). Another participant reflected similar sentiments when she said, “I pretend to text or talk on the phone when I’m scared. Sometimes I get scared when I am walking around our town or if I’m in the car alone” (female, junior). One participant said, “I was walking home alone, and I felt uncomfortable because there were people around that I didn’t know” (female, senior).

Willingness to Communicate and Texting

The third research question addressed was how is adolescents’ willingness to communicate in face-to-face situations associated with texting behaviors and perceptions?

The following hypothesis guided data analysis for this question:

H2: Individuals who engage in and perceive acceptability of social texting behaviors will be more likely to demonstrate willingness to communicate in face-to-face situations than will those who are less engaged in texting behaviors.

This question was examined using hierarchical multiple regression. Table 5 contains a brief description of the block entry. The criterion variable was the sum of the ten questions used from the *Willingness to Communicate Scale*. The first block entered included demographic variables that had potential to be related to the willingness of adolescents to communicate. Gender was included first, followed by student year in school, and finally student GPA. Neither ethnicity nor SES was included in this model. A chi-square analysis was conducted of both variables in relation to the sum of the willingness to communicate variable. No statistically significant group differences were found.

The second block entered pertained to actual texting behaviors. First, cell phone use preference, whether participants preferred to call, text, or use both, was included. Next was participants' classification of self as a light, medium, or heavy texter. The next variable included was average texts participants sent in a day. This was measured on a 5-point Likert Scale with 1 = "0-50" and 5 = "250+." The next variable included was who adolescents indicated they texted the most. This variable was collapsed to reflect family members and peers (classmates, boyfriends/girlfriends, and friends).

The third block contained perceptions of texting in social situations. This was an average of six items on the survey designed to understand perceptions of acceptability of texting in multiple social situations. The situations included class, religious services, work, hanging out, when someone else is talking to you face-to-face, and at a meal such

Table 5

Blocks for Hierarchical Regression Analysis

Block	Description of Block	Variable Entered
1	Student Demographic Information	Gender Year in school Current GPA Cell phone preference
2	Texting Behaviors	Texting level Average texts per day Texting peers or family members
3	Texting Perceptions	Average perceptions of acceptability Average perceptions of appropriateness

as dinner. These variables were each measured on a 5-point Likert Scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The next variable included in the final block entered was an average of participants' opinions about the appropriateness of texting behaviors. This variable was measured on a 10-point scale, with 1 indicating inappropriate and 10 indicating an appropriate behavior.

Preliminary Analysis

Histograms of value distributions were examined for all variables in the model. None of the variables had skewed or abnormal distributions that required transformation. Data were then examined for outliers. Centered leverage was calculated and examined. No extreme outliers were found. Three cases were slightly above the calculated leverage cut-off point. Each case was individually examined. Upon inspection, none of the cases appeared to be problematic, and so none were deleted. Data were then examined for multicollinearity. Tolerance and the variance inflation factor were examined. No

variables entered into the model indicated issues with multicollinearity. Correlation among the dependent variable and independent variables was also examined. None of the variables were correlated highly enough to be excluded from the model ($r < .6$). The correlation of the independent and dependent variables are presented in Table 6.

Hierarchical Multiple Regression

Hierarchical multiple regression was used to examine the relationship among willingness to communicate and demographic characteristics, texting behaviors, and perceptions of texting in social situations. The analysis partially supported H2. Individuals who engaged more in texting behaviors and had higher perceptions of the appropriateness of texting in social situations were more willing to communicate in face-to-face situations. However, the scores associated with perceptions of the acceptability of texting in various social situations were negatively associated with willingness to communicate. The final model explained approximately 16% of the variance in the independent variable ($R^2 = .16$). Table 7 contains results from the regression analysis. Standardized beta scores are presented first to demonstrate the magnitude of the impact of the variables since β is reported in standard deviation units. Next, unstandardized beta scores are presented to indicate the direction of the contribution of specific variables.

The first step in the hierarchical multiple regression was to enter three student demographic variables into the model. Two of these were statistically significant predictors of willingness to communicate. These variables were student year in school ($\beta = .18, p < .05$) and student current GPA ($\beta = .19, p < .05$). Five text messaging behavior variables were entered into the second model. Two of these were statistically significant

Table 6

Correlations Among Willingness to Communicate, Texting Behaviors, and Texting Perceptions

Variables	1	2	3	4	5	6	7
1. Willingness to communicate	—						
Texting Behaviors							
2. Phone use preference	.15*	—					
3. Texting level	.09	-.04	—				
4. Texts per day	.01	.03	.52**	—			
5. Texting friends or family	-.11	-.04	.19**	.16*	—		
Texting Perceptions							
6. Perceptions of acceptability	.04	.10	.16*	.18**	.09	—	
7. Perceptions of appropriateness	.10	.02	.14*	.13	.07	.26**	—

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

predictors of willingness to communicate. These variables were participants' preference of texting, calling, or both when using their cell phones ($\beta = .16, p < .05$), and participants' self-identified level of texting ($\beta = .22, p < .05$).

Two variables measuring participants' perceptions of texting in various social situations were entered into the final model. Participants' averaged perceptions of the appropriateness of texting in various social situations ($\beta = .19, p < .05$) was the only

Table 7

Hierarchical Multiple Regression Analysis Predicting Willingness to Communicate from Demographic Characteristics, Texting Behaviors, and Texting Perceptions

Predictors	B	SE B	β	ΔR^2
Step 1 (Student demographic characteristics)				
Constant	40.41	10.26		.07**
Gender	-4.38	3.05	-.12	
Year in school	4.50	2.01	.18*	
Current GPA	6.99	2.93	.19*	
Step 2 (Texting behaviors)				
Constant	18.31	13.25		.06*
Cell phone use preference	4.66	2.17	.16*	
Texting level (low, medium, high)	5.84	2.45	.22*	
Average texts per day	-2.14	1.14	-.17	
Texting peers or family members	4.63	4.37	.08	
Step 3 (Texting perceptions)				
Constant	12.31	14.94		.03
Average perceptions of acceptability	-0.88	2.31	-.03	
Average perceptions of appropriateness	1.44	0.62	.19*	

Note. DV = willingness to communicate; $R^2 = .07$ for Step 1. * $p < .05$, ** $p < .01$

statistically significant predictor of willingness to communicate in face-to-face situations.

Although not statistically significant, two variables contributed to the model in the direction predicted. Females were more likely to be willing to communicate ($B = -4.38$, $SE = 3.05$), and preference for texting peers was positively associated with willingness to communicate in face-to-face situations ($B = 4.63$, $SE = 4.37$). One variable was not in the direction hypothesized. Sending fewer text messages in a day was associated with an increase in a participant's willingness to communicate in face-to-face situations ($B = 2.14$, $SE = 1.14$).

Adult Misconceptions of Adolescent Texting

Participants were asked if they felt that adults had any misconceptions or wrong ideas about teenagers who text. This question was presented as an open-ended question for which participants were encouraged to explain their perspective. Data were analyzed using qualitative procedures as outlined by Bogdan and Biklen (2003).

Two researchers analyzed the data. Both noticed patterns surrounding adolescent discussion of adult misconceptions including time investments, generational differences, and a youth culture surrounding text messaging. These themes were collapsed into one coding category of misunderstandings surrounding motivations and practices. Later, the themes that had been collapsed for coding were used to further explain the data. This process was used for the other coding categories as well. For example, many teens referenced sexting or other questionable text message content, while others were quick to note adult perceptions of impacts on developmental components of adolescence such as sociality, communication, and academic performance. The final coding category of "no

misconceptions” did not take much discussion among researchers. Participants who did not feel there were misconceptions were concise in their explanations. Using the established coding categories, each researcher then read the data and independently coded the data.

While coding responses, when items were found which were not agreed upon by both researchers, the researchers met again for discussion until a consensus was established. During the discussion, both researchers explained the reason for coding the response. A consensus was then reached for each miscoded item. After data were coded, one researcher organized the coding categories and identified themes within the categories.

Of the total participants, 161 (73.9%) provided a response to this question. As the researchers immersed themselves in the data, four major themes emerged. In order to present results in a logical way, themes that represented an affirmative perspective are presented first, with themes and subthemes presented in order of prevalence. First, 60 adolescents (37.3%) spoke about adults’ general misperceptions about motivations and practices associated with adolescent texting. Next, 37 adolescents (23.0%) discussed adult misconceptions about the content of their messages. Finally, 22 adolescents (13.7%) talked about adults having misconceptions about the impact of texting behaviors on adolescents’ developmental processes.

The majority of the participants commonly agreed that adults did have misconceptions about adolescent text messaging. However, 42 participants (26.1%) responded “no” to this question and explained their position. A general theme entitled “no misconceptions” emerged. Participants supported their perspective by stating

common misconceptions are actually true and discussed how adults do not have misconceptions because they also use text messaging.

Misconceptions of Motivations and Practices

Of the participants who responded to this question, 60 (37.3%) indicated they felt adults had misconceptions regarding motivations and practices. The majority of the participants who discussed adult misconceptions of motivations and practices focused on texting as being something that teens easily understood, yet adults had a harder time grasping—indicating an apparent youth culture. Next, adolescents talked about how many adults take the practices and motivations of a few teenagers and generalize them to all teenagers. Finally, these participants explained that adults had misconceptions about adolescent motivations and practices when it comes to consumption, both actual time and personal investment in texting.

Youth culture. The majority of the participants who spoke of adult misconceptions about motivations and practices surrounding teenage text messaging behaviors noted something of a youth culture that adults do not comprehend. Some discussed these misconceptions as adults' lack of ability to use texting or as a result of a generational difference. Some participants talked about the inability of adults to see the value of texting that is readily apparent to an adolescent.

Participants frequently highlighted that adults have misconceptions about teenage use of text messaging because adults lack the abilities needed to effectively text that adolescents possess. For example, one participant said, "Just because adults text like 40 wpm (words per minute) doesn't mean they have the right to be jealous of teens texting"

(female, senior). Another participant said, “They criticize texting in general. If they knew how then I’m sure they would do it just as much as we do” (male, junior). One participant indicated that because adults are not as adept at texting as are adolescents that it makes adults focus on potential miscommunication. She said:

They don’t feel comfortable with technology or see past the whole “it’s awesome to send someone a message instantly” thing and worry about the realities like, what if they misunderstand the text, or what if they say something they wouldn’t normally say when, for example, talking to them in person or even on the phone. (female, senior)

These participants also noted that some adults do not understand teenagers’ texting behaviors because of their age or the generation to which they belong. One participant simply stated the adults have misperceptions, “. . . because they are old” (female, junior). A few participants discussed the generational differences between teens and adults. One said, “. . . when they were young the thing to do was to call, but for us it’s to text” (male, senior). Another participant said, “From my experience, my parents feel as if texting is irrelevant, and it is just easier than calling people like the way they did it in the 80s” (female, senior). Speaking to this generational inability to understand the motivations and practices surrounding text messaging, one participant noted:

I believe it is because their generation did not grow up with the technology of our day so they don't understand our fascination with things that help us communicate more easily and efficiently than a phone call or e-mail. They believe talking in person or calling is easier and a better way of communicating to others, but now-a-days that is considered old school. (female, senior)

For these participants, some adults do not see the ease in communication through texting, nor do they understand how it can be employed appropriately. One participant explained that adults have misconceptions about motivations and practices because they do not see what adolescents see in the value of the communication. She said:

I think adults don't see the value in texting as a form of quick communication and networking. It's easy to text a lot of people and you can "keep in touch" that way while never actually having to see the person. Later in a business or company having these "friendships" can be useful. (female, senior)

Other participants felt similarly that adults do not see what teenagers see, and that adults do not understand appropriate practices surrounding text messaging. One participant summarized this idea well when she said:

Of course, my parents think it would be easier to just call, but they don't realize how easy it is if you're busy to just text someone to tell them: "I'm running late, I'm on my way, call me when you can, meet for lunch???" Some situations are good for texting. Now arguing, that should be in person, or at least over a phone call, but a text can be a lot quicker and more convenient for the other person too. My parents always say that I answer a text quicker than a phone call, and that's true. Sometimes I can't answer a phone call!! Mom – quit calling me in class, I CAN'T ANSWER :). (female, senior)

Generalization of beliefs about practices. Many participants felt the misconceptions adults express about text messaging are based on their generalizations of the motivations and practices of a select few adolescents to the whole adolescent population. Some of the commonly misconstrued motivations and practices generalized to all included general judgments or ignorance, specific texting instances that could be dangerous or disruptive, and misconceptions about the amount of texting in which adolescents engage.

These participants felt adults use generalizations of a few teenagers' behaviors to apply judgments to all teenagers. One said, "Not all of us are the same. Some people text more than others" (female, senior). Another participant echoed this response and said, "Not everyone is the same and we shouldn't be judged for a few peoples' ignorance" (female, junior).

Some participants spoke about a small group of adolescents that ruin the image of adolescent texting motivations and practices for adults. One participant spoke about texting while driving and texting during class. She said, “They seem to think that all teenagers text while driving and in class, when there are those who don’t rely on text messages that much” (female, senior). One participant said, “. . . it’s only the few that don’t follow rules or etiquette that puts a bad image of texting into someone’s mind” (female, senior). Similarly, one participant said:

They have a tendency to think that all teenagers text a lot, but really not all of them do. Those who do text a lot text so much that they make it seem as though the rest of teens are also texting. (female, sophomore)

Consumption. Adolescents who indicated that adults do have misconceptions about motivations and practices of adolescents’ texting discussed adults’ faulty views of the amount of time, including physical and mental engagement, in which adolescents use text messaging. Some adolescents reported that adults see their practices as a waste of time, and some suggested adults see texting as consuming in the way a drug is consuming.

A prevalent theme from this category of responses was that adults think adolescent motivations and practices with texting are time consuming. One participant said, “They think we are on the phone all the time. If we were on the phone all the time we would never get anything done, but I always get my stuff done” (male, junior). Another participant said, “Adults feel we are wasting time, but they don’t understand that we like to stay in contact” (female, sophomore). One participant defended the practice of spending time with texting. She said, “They think you text too much. Well, duh. You’re having a conversation with someone!” (female, sophomore)

A few adolescents indicated that adults' misconceptions take text messaging and compare it to something addictive, like a drug. One participant said, ". . . they believe that texting is a drug and it takes over people's lives" (male, junior). Similarly, another participant said, "They think we are addicted to it, when in reality, we aren't. Obviously we could quit texting at any time, because cell phones didn't always exist and they didn't always have texting available" (female, sophomore).

Misconceptions of Message Content

Of the participants who responded to this question, 37 (23.0%) felt adults had misconceptions regarding the content of their text messages. Adolescents explained that many adults' misconceptions about texting come from misperceptions about the content of a text message. These participants suggested that adults, in general, assume the content is negative or harmful. For example, many discussed sexting and some talked about parents thinking that adolescents are texting strangers. One participant summed up these adult misconceptions about content by saying, "They may think that we are texting someone we don't know, or texting something dirty, or planning to do something bad with someone else" (female, sophomore). Another participant also addressed all of these concerns when he said, "They [adolescents] might be thinking wrong ideas, [engaging with] bad influences, or sending nude images, or talking to the wrong kind of people" (male, junior).

General content concerns. Some adolescents expressed adult misconceptions concerning bad content or behaviors associated with text messages, generally. This subtheme emerged through statements like: "They think we're doing something bad or

hiding stuff” (male, senior). “They usually think teenagers are texting bad things” (male, senior). “When teenagers text it is not always about the bad things. Most of the time they are still innocent little conversations going on” (male, senior). A female participant’s words further explain adult misconceptions concerning texting content. She said, “Adults feel that teenagers who text are up to no good. That is SO not true. Some things we text are really important and just fun natured. I, personally, am never texting badly” (female, sophomore).

Sexting. Many participants focused on adult concerns about adolescents’ sexting. One participant said, “They see on the news about the porn and make wrong assumptions about every text” (female, junior). Some participants defended the real content of adolescents’ messages. For example, one adolescent said, “They think every teenager is doing something wrong with their cell phone, like sending pictures of things they shouldn’t. Not every teen does that, but it’s true some do” (female, senior). Another participant said, “They think all we do is text and sexting. But it is the way we talk to another when we can’t see them” (male, sophomore). One participant was very straightforward and said, “Not everyone is sending out texts for girls to show them their boobs” (male, senior).

Other participants suggested there was a misconception about message content associated with texting, but they also supported this adult perspective based on the content of their own messages. One participant said, “They think we are talking about naughty stuff, and sometimes we are and sometimes we are not. I got to admit that I’ve been caught talking about naughty stuff” (female, sophomore). One participant suggested that whether they were texting or talking on the phone, similar content would

emerge. He said, “The news makes it sound worse than it really is. Sometimes we are just talking and yes, sometimes it is more erotic. But isn’t it gonna be the same when talking on the phone?” (male, sophomore). Another participant said,

Since there’s been a lot of “sexting” going around the parents/adults will place more cautions on their teens for texting way too much. They could be talking to a complete stranger right in front of their parents and their parents wouldn’t even know a thing. It’s kinda ridiculous. (female, sophomore)

Misconceptions about Developmental Impacts

Twenty-two adolescents (13.7%) expressed how adults have misconceptions about the developmental impacts of text messaging. Some spoke about social impacts, and others spoke about academic and language impacts.

Social impacts. Adolescents expressed that adults are very concerned about the social impacts of text messaging. For example, one participant said, “Some adults think teenagers who text too much are losing their social life. In some cases I can agree, but they shouldn’t assume it’s occurring to every teen” (female, senior). Some participants felt that this social aspect of texting was not damming to social abilities, but a facilitator of social abilities. One participant said, “I believe that [texting] is needed to help with the social part of life when needing to talk about your feelings” (male, junior).

One participant talked about adults’ concerns regarding the impact of texting on face-to-face interactions. She said, “I believe adults are worried about the interaction between teens and, therefore, the lack of interaction between teens when texting comes into the bigger picture” (female, senior). Another participant similarly said, “They think that teenagers are losing their ability to speak and act appropriately in a social setting, but we do just fine in both” (female, senior). One participant said:

Parents believe we only socialize through text, which for me is not true. I still hang out with my friends every weekend, go on lots of dates, I call my cousin and can talk for hours with her about new things in our lives, and I still have school, church, and sport games that I socialize with others. (female, junior)

Academic and language impacts. Some of the participants in this study felt adults have misconceptions about texting because adults believe it is hindering adolescents' academic abilities and their proper use of language. One participant spoke regarding texting impacts on language. She said, "When we speak improperly it's mostly just to piss our parents off" (female, senior). One participant stated that texting has just as much impact on adolescent language abilities as it does on adult language abilities. He said, "It ruins our English just as bad as theirs" (male, senior). Another participant said, "They think we are stupid for it, that it is lowering our communicating ability, when in fact it is helping us communicate, and if used correctly can be a healthy environment" (male, junior).

Some participants who indicated that this was a misconception that adults possessed about texting also pointed out that there was potential for language impacts. One participant said, "They [adolescents] use it sometimes in school like 'lol,' 'y' instead of 'why,' '4' instead of 'for,' well, you get my point" (female, junior).

No Misconceptions

A portion of the sample (42 participants, 26.1%) indicated that they did not perceive that adults had misconceptions about texting. Responses that indicated a stance of no adult misconception grouped in two ways: (1) misconceptions about texting that are commonly discussed actually represent adolescent texting behaviors, and (2) adolescents

are not the only people who text, and adults understand texting because they too use this technology feature.

Many of the responses explained that the supposed adult misconceptions about text messaging are actually accurate. Some of the participants even supported adult beliefs about texting. For example, one participant said, “Texting can be very distracting. I do 100% believe no one should text and drive” (female, junior). Another participant said, “They just all think teens text too much and I’m not gonna lie, I do text A LOT (: ha ha” (male, senior). One participant felt it was not an adult misperception that was the problem, but actual teenage practices. He said, “A lot of us who do text are little brats about it and need a reality check” (male, senior).

Others who said they did not believe adults had misconceptions about adolescent texting felt this was a result of adults having the ability to text, as well. One participant said, “Adults text too. Teens aren’t the only ones that text” (female, senior). Another teen said, “All the adults I know text as well” (male, junior).

Summary

Results from the quantitative analysis supported H1. There was a moderate positive correlation between texting behaviors and perceptions of the appropriateness of texting behaviors. Qualitative analysis revealed adolescents pretend to text for various reasons, including avoidance techniques, as a method to maintain positive appearance, and to create a sense of security in situations they perceived to be unsafe.

Quantitative analysis partially supported H2. Engaging in texting behaviors contributed positively to adolescents’ face-to-face communication and their perceptions

of the acceptability of texting behaviors. However, there was a negative association between the appropriateness of texting behaviors and willingness to communicate in face-to-face situations. Finally, qualitative analysis uncovered that adolescents felt adults have misconceptions about texting motivation and practices, message content, and the developmental impacts of texting. However, some adolescents felt that adults do have accurate perceptions of teenage text messaging behaviors.

CHAPTER V

DISCUSSION

This chapter contains a discussion of the results from this study of adolescent texting. First, results are examined based on the sequence of each research question. Next, results are examined in their totality through a social cognitive theoretical lens. Finally, a discussion of limitations and future research is included.

Relationship Between Behaviors and Perceptions

As hypothesized, all of the perceptions of the appropriateness of texting behaviors were positively correlated with participants' actual texting behaviors. All of the correlations were significant at the $p < .01$ level. The strongest correlations were between actually engaging in the behavior and the following perceptions: texting someone who is not well known but one is interested in getting to know, accepting a date through texting, and texting to request a steady relationship. All of these variables contribute to relationship formation.

The strong correlation between actually texting someone and having positive perceptions of texting someone who is not well known but one is interested in getting to know is consistent with previous research. Cupples and Thompson (2010) found that adolescents enjoy texting because it is a less awkward way to build a relationship and get to know someone. For their sample, texting was a less risky way to build a relationship compared to face-to-face communication.

The correlations between texting behaviors and accepting a date through texting and asking for a steady relationship through texting can also be understood through the mentioned results of Cupples and Thompson's (2010) study. However, these correlations are more complex. In the current study, the average of participants' scores for accepting someone's invitation for a date were over 5 ($M = 6.09$, $SD = 2.96$) on a 10-point scale indicating a perception of a somewhat appropriate behavior. Participants' average scores for asking someone for a steady relationship were closer to 4 ($M = 4.19$, $SD = 3.28$) on a 10-point scale, indicating a perception of a somewhat inappropriate behavior. Participants in Cupples and Thompson's (2010) study indicated that asking someone out is a behavior that should take place in face-to-face situations, not through texting, but no mention was made of accepting a date request or solidifying a relationship status. Perhaps for participants in the current study, perceptions are changing as they engage in texting more, but there is still a perception that some relationship formation behaviors should take place in face-to-face communication rather than via text.

One reason participants may feel texting is becoming an acceptable means for relationship formation is because of the private and asynchronous nature of the communication. Relationships can be managed all hours of the day or night, people who are shy can find a voice through texting, and texting is sometimes used to avoid awkward situations that are present in face-to-face communication (Srivastava, 2005). Furthermore, texting is often used to maintain social relationships (Holtgraves, 2011). This may be influencing various forms of social relationships, including relationship formation.

It is important to note that the correlations between perceptions and practices were only moderate. It was expected that there would be strong correlations between perceptions and actual texting behaviors. This is a relationship which needs further examination. In addition, as a correlate, it is impossible to determine if perceptions of texting are leading to an increase in behaviors or to report texting behaviors are leading to an increase in positive perceptions of relationship formation through text messaging. Rather, this result can be best understood through the theoretical lens of social cognitive theory. Individuals are not just driven by internal factors (perceptions) or controlled by external factors (behaviors). Development is understood as an interaction of behavior, cognitive and personal factors, and environmental factors (Bandura, 1986). Perhaps the correlation between perceptions and behaviors is best understood as an interaction of behavior, cognitive and personal factors, and environmental factors which would be conducive to positive perceptions and the appropriateness of texting behaviors.

Pretending to Text

In this study, adolescents pretended to text for a variety of reasons. First, many chose to pretend to text to avoid situations, people, and even to avoid themselves. Others chose to pretend to text because they wanted to project a positive social appearance. Finally, some chose to pretend to text because it gave them a sense of security when they perceived a situation to be unsafe.

Many of the adolescents who said they pretended to text indicated they chose to do this to avoid people or to avoid themselves. Pretending to text was a way to avoid approaching a potentially awkward face-to-face communication situation. Researchers

have not examined reasons surrounding pretending to text, but have reported similar avoidance reasons for actual texting. For example, some adolescents choose to text to avoid awkward silence, or to avoid having to talk to others (Thompson & Cupples, 2008). Reid and Reid (2007) found that those with more problematic personality behaviors used texting for avoidance. The researchers found that anxious participants in the study used texting to avoid activities, including avoiding boredom.

In the limited research available about pretending to text, researchers have indicated that adolescents pretend to text in an attempt to appear positively in social situations (Cupples & Thompson, 2010). In this study, some adolescents felt that pretending to text helped them to give a positive appearance of themselves in social situations. These adolescents did not want to appear to be alone. They wanted to look as if they were connected with their social network.

Texting is a private communication that takes place in a public sphere (Holtgraves, 2011). David Elkind (1979) proposed the concept of imaginary audience. This is an adolescents' belief that others are as equally interested in their lives and experiences, as is the adolescent. This desire for a positive social appearance through text messaging could be a reflection of an adolescent performing to an imaginary audience. While individuals in adolescents' physical proximity may potentially be observing their behavior as they text, adolescents may be performing to an imaginary group, or a group not as interested in a social appearance as is the teen.

Other participants in this study chose to pretend to text to give themselves a sense of safety or security. This finding was interesting considering many adolescents have cell phones because parents feel adolescents are safer with a cell phone (Lenhart, 2010).

Even early research on cell phones indicated cell phones were important for perceptions of safety (Aoki & Downes, 2003). In the current study, the majority of respondents who indicated they pretended to text to feel safe were female. This finding is supported in past research. Adolescent females are more likely than adolescent males to report feeling safer because they possess a cell phone (Lenhart, 2010; Walsh et al., 2008). Beyond general cell phone use, Srivastava (2005) reported that parents enjoy the texting feature on phones to remain connected with their adolescents and to provide a sense of safety.

Social cognitive theory is clearly applicable in adolescents' desires to pretend to text. There are obvious behavioral (texting for avoidance of self or face-to-face interaction), personal and cognitive (texting for a mental perception of sociality), and environmental (perceptions of unsafe situations leading to texting pretense) factors contribute to adolescent desires to pretend to text. Furthermore, adolescents in this sample may be developing internal standards about when pretending to text would be most acceptable, which regulates the situations in which they choose to pretend to text.

Face-to-Face Communication and Texting

The hypothesis for the fourth research question was mostly supported. First, gender and year in school both contributed in the way that was anticipated. These findings support previous research examining these demographic variables in relation to texting. Females text more than do males and use texting more for communication purposes (Lenhart, 2010; Madell & Muncer, 2004; Oksman & Turtiainen, 2004). Texting also increases with age through adolescence (Rideout et al., 2010), with older adolescents being more likely to text than younger adolescents (Lenhart et al., 2010). Furthermore,

perhaps older teens and females are more likely to communicate in face-to-face situations, as well.

The role of GPA in this study was interesting. GPA was a statistically significant contributor to the model, and positively associated with participants' willingness to communicate in face-to-face situations. It is intuitive that those who perform better academically may have the proclivity to communicate more openly in face-to-face situations. Regarding text messaging, there are mixed results from other literature addressing academic performance. Much of the previous literature examines texting in relation to expressive English. Some researchers suggested individuals involved in more texting are poorer readers (Coe & Oakhill, 2011), while other researchers found that the use of textese does not have a negative impact on spelling ability (Powell & Dixon, 2011). Furthermore, Lenhart (2010) found that American adolescents use texting to become more engaged in school and learn about school projects and guidelines.

The texting behaviors entered into the regression analysis mostly contributed in the hypothesized way. Individuals who preferred to both call and text were more likely to be willing to communicate in face-to-face situations. Perhaps for this sample the cell phone was seen as a total communication device, not simply a means for texting, but for complete communication. Participants' self-identified level of texting was also a statistically significant contributor to participants' willingness to communicate in face-to-face situations. Although not a statistically significant contributor, preference for texting peers was also a positive contributor to willingness to communicate in face-to-face situations. These three variables, taken together, are supported by findings in the literature available about adolescent text messaging. The majority of teens send text

messages to their friends on a daily basis (Lenhart et al., 2010). Texting is used to build and solidify social networks and is associated with increased interactions among peer networks (Berg et al., 2005). These social networks being constructed are not virtual friendships. For extroverted college students, texting can be a way to increase social interactions and build interpersonal relationships (Ehrenberg et al., 2008). Texting is often used to coordinate actual social activities (Ling et al., 2005). These positive social impacts of text messaging were also seen in the relationship between the texting behaviors of participants in this study's sample and their desire to communicate in face-to-face situations.

One variable in this block did not contribute in the way expected. A negative relationship was found between the average number of texts sent in a day and a participant's willingness to communicate in face-to-face situations. Some researchers have suggested some individuals experience addictive-like tendencies with text messaging (Rutland et al., 2007; Walsh et al., 2008). Perhaps the individuals in this study who sent the maximum number of texts in a day are reflecting an addictive tendency which would inhibit face-to-face communication. Perhaps such high levels of texting are indicative of a desire to text for communication and not communicate in a face-to-face setting.

Participants' average perceptions of acceptability did not contribute to the model in the way hypothesized, yet participants' average perceptions of appropriateness was a statistically significant contributor and contributed in the way predicted. Explanations for these findings are only speculative. Texting acceptability variables were social events and locations for texting. Texting appropriateness variables were related to relationship

formation and termination. Perhaps participants in this study followed the rules established about acceptable locations for texting. For example, adolescents choose to text in situations when it would be rude or inappropriate to talk on the phone (Lenhart et al., 2010). Maybe participants in this study perceived many of the situations presented as potentially inappropriate for either a voice call or a text message.

Perceptions surrounding the appropriateness of texting in relationship formation or termination may also be changing. For these participants, perhaps the positive impact of perceptions associated with the appropriateness of texting was a reflection of the youth culture of text messaging. For these young people, their youth culture is being built through texting while texting is also building their expectations about relationships resulting in a grander picture of the social aspects of their youth culture.

The variables which did not contribute in the way predicted may be best understood through a social cognitive theoretical perspective. Bandura (2009) noted that individuals are influenced by internal standards of behavior evaluation and also externally influenced by the behaviors of others. The willingness of adolescents to communicate in face-to-face situations in relation to texting behaviors may best be understood by considering which perceptions of texting behaviors are a reflection of an internal standard, and which are a reflection of observing the behaviors of peer networks to gain an understanding of acceptable and appropriate behaviors.

Adult Misconceptions

Mixed findings have emerged in previous research pertaining to adult ideas about texting. Some research findings even suggest an agreement in opinions about texting

between adolescents and adults. Participants in this study expressed multiple misconceptions surrounding adolescent text messaging they have perceived in adults. Many spoke about adult misconceptions regarding adolescents' motivations and practices, others discussed misconceptions about message content, and some felt that adults had misconceptions about the developmental impact of texting.

The adolescent youth culture of text messaging was most strongly presented in the data for this research question. The idea of youth culture became a theme with adolescents who felt there were adult misconceptions about adolescent texting motivations and practices. Adolescents appeared to understand their culture surrounding text messaging and pointed out that adults could not see this. One participant encouraged her mother to quit calling her during class, because it is not an appropriate cell phone behavior. Another participant noted teens are building a valuable social network, and adults did not understand the value of texting to build connections. This youth culture may be a reflection of adolescents having an easier time engaging in this newer media than adults (Bryant et al., 2006).

Other themes associated with misconceptions of motivations and practices dealt with generalizations about behaviors and perceptions of adolescents' over consumption of texting. In association with past research, adolescents reported a perception that adults view texting as a waste of time (Cupples & Thompson, 2010). Participants in this study were keenly aware of this idea. Interestingly, a few participants used words such as "drug" and "addiction" to describe adult perceptions of how much time adolescents spend with text messaging. Walsh and colleagues (2008) reported that their participants felt euphoria when they received text messages, and other researchers have discussed

addictive pitfalls associated with cell phone use and texting (Aoki & Downes, 2003; Rutland et al., 2007). The adolescents in this study indicated this was an adult misconception, not an actuality for adolescent texters.

Adolescents in this study also felt that adults had misconceptions regarding the content of the messages being sent. Some participants mentioned bad or harmful content, in general, and made specific reference to sexting. Many of the adolescents in this study supported the idea that these were simply misconceptions. Others indicated they had engaged in these behaviors, giving legitimacy to adult concerns. Only 4% of American teens between the ages of 12 and 17 report sending sexts, whereas 15% report receiving sexts. Some receive sexts from a romantic partner, some of those sexts are shared outside of the partnership, and some are exchanged between individuals who are interested in starting a relationship (Lenhart, 2009). This is an area that requires further investigation. Some participants indicated sexting was a misconception, and others reaffirmed adult perceptions that sexting is a part of adolescent texting.

These participants also felt that adults had misconceptions about the potential developmental impacts of text messaging. Some spoke about misconceptions over social impacts. This misconception is supported by past research. Researchers have shown that texting is often used to build face-to-face relationships and social networks (Berg et al., 2005; Ehrenberg et al., 2008; Ling et al., 2005). For the participants in this study, this was also the case. They felt they were building social networks, not destroying social abilities.

Other participants felt adults had misconceptions about the impact of texting on language development. Both the media and parents have mentioned this as a concern

(Thurlow & Bell, 2009). One participant felt this was a misconception, but noted that textese is showing up in school. However, the majority of participants in this study indicated this idea of negative language impacts was a misnomer. In fact, some felt that adults have just as much potential for language impacts.

There was also a group of participants who felt adults had an accurate perception of adolescent texting behaviors. These participants felt either that adult perceptions were accurate or that adults text as much as teenagers do, so it is a non-issue.

The connections between social cognitive theory and participants' perceptions of adult misconceptions are clear. As Bandura (1986) noted, there are internal and personal determinants that influence behaviors, development, and perceptions. Although each of the adolescents in this study may belong to the same cohort, and all of these adolescents can text, some participants felt adults had overwhelming misconceptions whereas others understood adult perceptions and did not see them as misconceptions. This is a clear connection with individual environments, behaviors, and personal and cognitive factors influencing perceptions.

Another theoretical interpretation comes with individuals having the ability for self-regulation and self-reflection (Bandura, 2009). Most of the participants in this study indicated they had the ability for self-regulation regarding texting: texting was not like a drug to them, texting was not impacting their development, and they did not send messages containing sexual content. Similarly, some of the participants indicated that other adolescents may have negative behaviors associated with texting but that they personally did not engage in negative behaviors. These participants indicated they had an

ability to individually regulate and reflect about their behaviors and personal internal standards.

Overall Data Examination

Much of the qualitative and quantitative data were supportive in building a greater understanding of the social implications of adolescent text messaging. These data, examined together, give an idea of social rule and social behaviors, potential impacts on face-to-face communication, relationship formation expectations, and an overall picture of the youth culture of text messaging.

As an example, quantitatively, it was found that preferring to both call and text on cell phones was associated with an increase in willingness to communicate in face-to-face situations. This association was supported in the qualitative research, as well. One participant said:

Parents believe we only socialize through text, which for me is not true. I still hang out with my friends every weekend, go on lots of dates, I call my cousin and can talk for hours with her about new things in our lives, and I still have school, church, and sport games that I socialize with others. (female, junior)

These results from quantitative and qualitative analysis give a more complete understanding of the adolescent social experience in texting. By using a mixed methodology, various aspects of adolescent sociality in conjunction with texting could be examined.

Social cognitive theory provided a necessary framework to connect the quantitative and qualitative components. Through a social cognitive framework, personal and cognitive, behavioral, and environmental interactions explained adolescent texting

perceptions and behaviors. The theory was useful because some participants indicated that experiences were influenced by internal factors while others indicated they were based on external factors. For example, some participants pretended to text to avoid themselves, while others pretended to text based on an interaction of internal and external perceptions to maintain a positive appearance. This theoretical perspective provided a way to qualitatively and quantitatively understand the adolescent experience with text messaging.

Limitations

This study has a number of limitations. First, the data were self-report. Some of the participant responses were questionable. For example, the variable of number of texts sent in a month was not used in analysis because of the wide range of responses. When attempts were made to correlate this variable with other measures of texting level, it was obvious that the values lacked reliability. It appeared that there may have been over reporting on this item.

Survey size and district restrictions were also a limitation of this study. The complete adolescent social experience could not be examined due to the survey item restrictions. Generalizability of the results is also brought into question. This sample's experience may be different than the experience of other adolescents. This could be a reflection of the convenience sample selection.

Associated with generalizability, another limitation of this study was the ethnicity of the sample. Although not a homogenous sample, there was not enough ethnic diversity to completely understand the results or the experiences of the adolescent

experience with texting. In this sample, when the ethnicity was used as a variable for data analysis, no differences in perceptions or behaviors appeared between Latino and Caucasian participants, the most represented ethnicities in this study. Future research should look for samples with more ethnic representation, especially since research regarding American adolescent texting behaviors and ethnicity is limited.

Future Research

It is established that adolescents form social rules about text messaging (Crystal, 2008; Laursen, 2005; Lenhart et al., 2010; Pettigrew, 2009), but little discussion is provided as to how adolescents form or come to understand these rules. This current research found that adolescents' do have perceptions of the social appropriateness of texting, but further exploration is needed to discover how these social perceptions are formed and what other influences are impacting social rules and text messaging behaviors.

Further examination should be conducted to examine the relationship between a student's academic performance and texting behaviors. This area had mixed findings in the research, largely because much of the research has been conducted with college populations. Future research should examine texting impacts on the academic performance of high school students who are the most avid texters.

Future research should also include an examination of other aspects of the adolescent social experience in relation to text messaging. For example, a deeper examination should be conducted to understand texting in the context of romantic

relationships, sibling relationships, and texting in relation to hobbies, leisure activities, or engagement in extracurricular activities.

This research adds a necessary positive examination of newer media use. As mentioned, parents and news media are quick to point out the potential negative impacts of text messaging, yet this research provided a more positive light for understanding the impacts of texting. Even though adolescents are engaging in texting as a primary form of communication, on a whole it is contributing to their face-to-face relationships, not decreasing their abilities to communicate with others in physical social settings. Adolescents are also very aware of themselves, what their behavior looks like, and how adults perceive their actions. Adolescents recognize the potential for harm to themselves through texting. They are also quick to point out the level of control they can exercise in their own lives over their texting behaviors.

In addition to gaining a positive perspective of a newer media, this research contributes to the understanding of social implications of adolescent text messaging. Although more remains to be examined, this research helps to further clarify the youth culture of texting. The youth culture being built through texting seems to be bigger than just something surrounding a communication device, but a culture that can help researchers in understanding the lived adolescent experience.

Future research should further examine the parent-child dyad in relationship to texting. As historically noted, parents and adolescents may have conflictual relationships, with many of the conflicts being over mundane issues (Collins & Laursen, 2004). Texting and other communication media is so embedded in youth culture and daily living that it is ordinary (Cupples & Thompson, 2010), not something

extraordinary. As such, texting is becoming something that is a source of conflict for adolescents and parents. The participants in this study provided their perspectives of this potential conflict with parents and adults surrounding texting, while simultaneously explaining texting is a part of being an adolescent—it is their youth culture.

Adolescent media use, in general, is a way to truly understand the youth culture that adolescents develop, and in turn the youth culture that influences their development. Although there are media that have been extensively studied in relation to adolescent development, newer media such as social networking and texting need further examination, as they are becoming definitive components of youth culture. As adolescents further engage in social networking, they present themselves socially and publically using both private and public information. As adolescents further engage in developing their youth culture through newer media, conflict and misunderstanding with parents is bound to happen.

Texting is an important behavior to examine to truly understand the adolescent experience because texting is not just a communication behavior. Texting is influencing and is associated with adolescent development. Texting is a means for many areas of study associated with adolescence: peer relationships, deviant behaviors, communication, cognitive development, and parent and family relationships. Amazingly, adolescent use of texting is becoming an encompassing aspect of adolescent development.

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APPENDIX

Text Messaging

Section 1: Personal Information

Please click the response that best represents your answer, or fill in the blank.

Gender

- Female
- Male

Year in School

- Sophomore
- Junior
- Senior

What is your current GPA?

If you do not know your GPA, you can leave this answer blank.

Ethnicity

- African American
- Asian or Pacific Islander
- Caucasian (not of Hispanic origin)
- Latino/Hispanic
- Native American or Alaskan Native
- Other:

What do you consider your family's income?

- Upper class
- Middle class
- Working class

Section 2: Cell Phone Information

Please click the box that best represents your answer or fill in the blank.

Do you own a cell phone?

- Yes
- No

Continue »

Text Messaging

Do you use text messaging on your phone?

- Yes
- No

When you use your phone do you prefer to

- Call
- Text
- Both equal
- Other:

How many people or contacts do you have in your cell phone address/phonebook?

On average, how many texts do you send in a typical day?

- 0-50
- 50-100
- 100-150
- 150-250
- 250 or more

How many different people do you text in a typical day?

How many texts do you send in a month?

How would you classify yourself?

- Heavy texter
- Medium texter
- Light texter

Who would you say you text the most?

Choose one

- Family
- Friends
- Boyfriend/Girlfriend
- Classmates
- Other:

Text Messaging

What are the most common reasons you choose to text people? List as many as you can think of.

✍

Is cell phone use (including texting) allowed in your school?

- Yes
 No

Do you use your cell phone in class without your teacher knowing?

- Yes
 No

Should texting be allowed in schools?

- Yes
 No

Why or why not?

✍

Have you ever done any of the following through texting:

	Yes	No
Asked someone for a date	<input type="radio"/>	<input type="radio"/>
Accepted someone's invitation for a date	<input type="radio"/>	<input type="radio"/>
Asked someone for a formal date (like prom)	<input type="radio"/>	<input type="radio"/>
Accepted someone's invitation for a formal date	<input type="radio"/>	<input type="radio"/>
Asked for a steady relationship (to be a boyfriend/girlfriend)	<input type="radio"/>	<input type="radio"/>
Broken up with someone	<input type="radio"/>	<input type="radio"/>
Texted someone you didn't know very well but were interested in getting to know	<input type="radio"/>	<input type="radio"/>

Have you ever pretended to text on your cell phone?

- Yes
 No

Text Messaging

If yes, what are some reasons you pretend to text?



Do you ever not respond to texts?

Yes

No

If yes, what are some of the most common reasons you do not respond?



Do you feel adults have any misconceptions, or wrong ideas, about teenagers who text? If yes, explain.



[« Back](#) [Continue »](#)

Please indicate how much you agree or disagree with the following statements

	Strongly Disagree	Disagree	Not sure/Neutral	Agree	Strongly Agree
It is acceptable to text during class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is acceptable to text during religious services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is acceptable to text at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is acceptable to text when hanging out with friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is acceptable to text when someone else is talking to you face-to-face	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is acceptable to text during dinner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[« Back](#) [Continue »](#)

Text Messaging

For each item, click the answer that best represents your thoughts today.

	Always	Often	Sometimes	Seldom	Never
If I have something to add to class discussion I speak up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think about the consequences of my decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I disagree with others I share my views	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are consequences to my decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think of all possible risks before acting on a situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to evaluate my daily actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider alternatives before making decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I stand up for what I think is right regardless of the situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think about how my actions will affect others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think about how my actions will affect me in the long run	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each item, click the answer that best represents your thoughts today.

	Always	Often	Sometimes	Seldom	Never
I like to evaluate my thoughts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that my opinions are valuable enough to share	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My decision making ability has improved with age	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am good at identifying my own strengths	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think more about the future today than I did when I was younger	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At school I keep my opinions to myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am best at identifying my abilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am good at evaluating my feelings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am the best judge of my talents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am better at decision making than my friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[« Back](#) [Continue »](#)

Text Messaging

Below are 10 situations in which a person would choose to communicate or not to communicate, meaning do these things face-to-face. Assume you have the choice. Indicate on a scale from 0 to 10 how comfortable you would be communicating face-to-face in these situations, with 0 being very uncomfortable (never would communicate) and 10 being very comfortable (always would communicate).

Present a talk to a group of strangers

0 1 2 3 4 5 6 7 8 9 10

Uncomfortable Comfortable

Talk with an acquaintance (someone you know, but not as well as a friend) while standing in line

0 1 2 3 4 5 6 7 8 9 10

Uncomfortable Comfortable

Talk in a large meeting of friends

0 1 2 3 4 5 6 7 8 9 10

Uncomfortable Comfortable

Talk in a small group of strangers

0 1 2 3 4 5 6 7 8 9 10

Uncomfortable Comfortable

Talk with a friend while standing in line

0 1 2 3 4 5 6 7 8 9 10

Uncomfortable Comfortable

Talk with a stranger while standing in line

0 1 2 3 4 5 6 7 8 9 10

Uncomfortable Comfortable

Present a talk to a group of friends

0 1 2 3 4 5 6 7 8 9 10

Uncomfortable Comfortable

Talk in a small group of acquaintances

0 1 2 3 4 5 6 7 8 9 10

Uncomfortable Comfortable

Talk in a small group of friends

0 1 2 3 4 5 6 7 8 9 10

Uncomfortable Comfortable

Present a talk to a group of acquaintances

0 1 2 3 4 5 6 7 8 9 10

Uncomfortable Comfortable

[« Back](#) [Continue »](#)

Text Messaging

On a scale from 1 to 10, with 1 being inappropriate and 10 being absolutely appropriate, how APPROPRIATE do you feel the following behaviors are through texting?

Asking someone for a date

1 2 3 4 5 6 7 8 9 10

Inappropriate Appropriate

Accepting someone's invitation for a date

1 2 3 4 5 6 7 8 9 10

Inappropriate Appropriate

Asking someone for a formal date (like prom)

1 2 3 4 5 6 7 8 9 10

Inappropriate Appropriate

Accepting someone's invitation for a formal date

1 2 3 4 5 6 7 8 9 10

Inappropriate Appropriate

Asking for a steady relationship (to be a boyfriend/girlfriend)

1 2 3 4 5 6 7 8 9 10

Inappropriate Appropriate

Breaking up with someone

1 2 3 4 5 6 7 8 9 10

Inappropriate Appropriate

Texting someone you don't know very well but are interested in getting to know

1 2 3 4 5 6 7 8 9 10

Inappropriate Appropriate

[« Back](#) [Submit](#)

CURRICULUM VITAE

Sarah S. Tulane

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Education:

- 2012 Ph.D. Family and Human Development; Utah State University
 Expected date of completion: May 2012
 Dissertation: *Social Implications of Adolescent Text Messaging*
- 2009 M.S. Family, Consumer, and Human Development; Youth and Adolescence
 Emphasis, Utah State University
 Thesis: *The Effectiveness of Graduate Teaching Assistants*
- 2008 B.S. Family, Consumer, and Human Development;
 Community Service Emphasis, Utah State University
 Summa Cum Laude

Teaching Experience:

Undergraduate Courses

FCHD 1010 – Balancing Work and Family
 FCHD 1500 – Human Development Across the Lifespan
 FCHD 3530 – Adolescence
 FCHD 5540 – Family Life Education Methods

Online Courses

FCHD 1010 – Balancing Work and Family
 FCHD 3520 – Children in the Middle Years
 FCHD 4830 – Senior Capstone Project

Professional Experience:

- 2011-Present Director and advisor for online Family Life Studies degree, Utah State University
- 2011-Present Lecturer, Utah State University

Professional Experience (Continued):

- 2010-2011 Research Assistant: Stepfamily Education, Utah State University. Processed and analyzed qualitative data from participants in stepfamily education courses.
Supervisor: Brian Higginbotham, Ph.D.
- 2010-2011 Research Assistant: Strong Marriages Project, Utah State University. Analyzed and processed qualitative data from study examining couples in strong marriages.
Supervisor: Linda Skogrand, Ph.D.
- 2010 Mentor: Guided undergraduate student in teaching FCHD 4330 – Family Finance Career Seminar, Utah State University. Gave suggestions and support for teaching and grading. Provided assistance with student issues.
- 2008-2010 Research Assistant: Agricultural Experiment Station (AES) grant research for teletherapy to rural communities, Utah State University. Prepared literature review about developmental impacts of divorce on children and adolescents. Combined and converted seven measures into an online format for electronic administration and data compilation. Assessed pertinent grant announcements.
Supervisor: D. Kim Openshaw, Ph.D.
- 2008-2009 Teaching Assistant: FCHD 3530 – Adolescence, Utah State University. Lectured about adolescent development pertaining to self-esteem, dating, achievement, and media. Created and updated multimedia used in course lectures. Evaluated content and developed exam questions. Upper division courses with 25 to 80 students.
Supervisor: Troy Beckert, Ph.D.
- 2008 Teaching Assistant: FCHD 1500 – Human Development, Utah State University. Lectured about general biological development throughout the lifespan and adult psychosocial development. Assisted with course maintenance. Introductory course with 100 to 175 students.
Supervisors: Stacey MacArthur, Ph.D.; Melanie Williams, M.S.
- 2008 Research Assistant: Utah State University Extension. Compiled extensive literature review about the spending and debt habits of college-aged populations.
Supervisor: Jan Andersen, Ph.D.

Professional Presentations:

- Beckert, T. E., Tulane, S., & Vaterlaus, J. M. (2012, March). Adolescent Perceptions of Acceptable and Appropriate Texting Behaviors as a Form of Social Communication. Society for Research on Adolescence, Vancouver, Canada.
- Lee, C., Beckert, T. E., & Tulane, S. (2012, March). Using Western Models of Autonomy with Eastern Youth. Society for Research on Adolescence, Vancouver, Canada.
- Tulane, S., & Vaterlaus, J. M. (2012, January). Student Perceptions of Text Messaging in School Contexts. Hawaii International Conference on Education, Waikiki, Hawaii.
- Tulane, S., Skogrand, L., & DeFrain, J. (2011, November). Couples in Great Marriages Who Considered Divorcing. National Council on Family Relations, Orlando, Florida.
- Higginbotham, B., Tulane, S., & Skogrand, L. (2011, November). Stepfamily Education and Changes in Financial Practices. National Council on Family Relations, Orlando, Florida.
- Tulane, S., Skogrand, L., & DeFrain, J. (2011, March). Considering Divorce: Perspectives From Couples in Strong Marriages. Intermountain Graduate Research Symposium, Utah State University.
- Tulane, S., & Beckert, T. (2011, February). Adolescent Perceptions of Texting as a Form of Social Communication. American Association of Behavioral and Social Sciences, Las Vegas, Nevada.
- Beckert, T., Davis, E., McFarland, J., Lee, C., Teemant, B., & Tulane, S. (2010, March). Relationship between Emerging Adult Psychosocial Development and Cell Phone Text Messaging Behaviors. Society for Research in Adolescence, Philadelphia, Pennsylvania.
- Lee, C., Beckert, T., Tulane, S., & Teemant, B. (2010, March). Differences in Adolescent Cognitive Autonomy with Caucasian and Taiwanese Youth. Society for Research in Adolescence, Philadelphia, Pennsylvania.
- Tulane, S., Beckert, T., Lee, C., & Teemant, B. (2010, March). Graduate Teaching Assistants' Utility and Knowledge: Instructor, Student, and Teaching Assistant Perspectives. Society for Research in Adolescence, Philadelphia, Pennsylvania.

Professional Presentations (Continued):

Beckert, T., Davis, E., Teemant, B., McFarland, J., Lee, C., & Tulane, S. (2010, February). College Students' Attitudes Regarding Socially Appropriate Cell Phone Texting Behaviors. American Association of Behavioral and Social Sciences, Las Vegas, Nevada.

Tulane, S., Beckert, T., Lee, C. & Teemant, B. (2010, February). Effectiveness of Graduate Teaching Assistants from Perspectives of Instructors, Students, and Teaching Assistants. American Association of Behavioral and Social Sciences, Las Vegas, Nevada.

Refereed Publications:

Tulane, S., Skogrand, L., & DeFrain, J. (2011). Couples in great marriages who considered divorcing. *Marriage and Family Review*, 47, 289-310.

Tulane, S., & Beckert, T. E. (2011). Perceived effectiveness of graduate teaching assistants. *Journal of the Scholarship of Teaching and Learning*, 11 (4), 44-55.

Accepted Refereed Publications:

Higginbotham, B., Tulane, S., & Skogrand, L. Stepfamily education and changes in financial practices. *Journal of Family Issues*. Manuscripts in Progress:

Dew, J., & Tulane, S. Media consumption and marital quality in a contemporary nationally representative sample.

Tulane, S., & Beckert, T. E. Adolescent perceptions of texting: A comparison of high school and college students.

Tulane, S., Vaterlaus, J. M., & Beckert, T. E. Adolescent perspectives of texting in school.

Tulane, S., & Skogrand, L. African American couples in strong marriages who considered divorcing.

Service:

2012 Advising Coordinating Committee. Participated in monthly trainings geared towards improving advising practices.

2012 Family Finance Statewide Extension Agent hiring committee

Service (Continued):

- 2011 Psychology Department Advising Office, Utah State University. Shadowed and assisted in advising sessions, assisted with surveying students.
- 2010-2011 Developed graphics and components for online courses and a Web Design course at Weber State University and Westminster College.
- 2009 “Clean Drive”: Organized and advertised a drive for materials for local domestic violence shelter. Collected over 700 items including personal hygiene items, soaps, cleaning supplies, and paper products.
- 2008-2009 Youth Advisory Board, America First Federal Credit Union: Advised marketing directors about development trajectories of adolescents in relation to media consumption.
- 2007 Orphanage Support Service Organization, Quito, Ecuador: Worked/volunteered in four orphanages. Performed therapies with children aged 1 week to 24 months daily. Prepared educational activities weekly, in Spanish, for children aged 1 year to 10 years old. Trained new volunteers as a site leader.

Awards and Honors:

- 2011 First Place– Intermountain Graduate Research Symposium
- 2011-2012 Phyllis R. Snow Academic Scholarship
- 2010-2011 Don C. Carter Academic Scholarship
- 2009-2010 Presidential Fellowship for Academic Achievement
- 2009-2010 Brent C. & Kevon Miller Academic Scholarship
- 2008-2009 Family, Consumer, and Human Development Department Graduate Teaching Assistant of the Year

Professional Organizations:

Phi Kappa Phi National Honor Society Member

The American Association of Behavioral and Social Sciences

National Council on Family Relations