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UNIVERSITY OF CALIFORNIA,
IRVINE

The Mere Presence of Mobile Phones During Parent-Teen Interactions

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Informatics

by

Simone Lanette

Dissertation Committee:
Associate Professor Melissa Mazmanian, Chair
Associate Professor Gillian Hayes
Professor Candice Odgers

2018

DEDICATION

First and foremost, I would like to dedicate this dissertation to Isaac Abrego. Thank you for being my partner in this crazy thing called life. You listened to me go on and on about cell phones for years, (hardly ever) told me to shut up, and continually challenged my ideas resulting in what the dissertation is today. But more importantly, you challenge and push me to better across all aspects of life. I am grateful for every day that we have shared, and will share together. I could never articulate how much you have influenced me and how much I look forward to changing the world with you. My mother, Michele Palmer also deserves my eternal gratitude for not only bringing me into this world but for also instilling in me her own fearless drive and perseverance. You led by the greatest example and I am forever thankful for the amount of times you read my work and told me to go back and do better (at the time I might have resisted, but “you were right.” Of course.) Scott Palmer, who provided me with the emotional support and the toolkit necessary to remember that constant perseverance can also be deserving of some self-care. You have always been in my corner, and it has made all the difference. Linda Willis, you have been my cheerleader this whole time. Even when you thought I was crazy, you always believed in me. Ralph Yermanian and James Abrego, you welcomed me with open arms and have always treated me like family. Your support and kindness has meant the world to me and I am so grateful for the time that I have had the pleasure to get to know you. Melissa Mazmanian, I couldn’t have imagined how much of an amazing mentor you would be and how much I would enjoy working with you. Sometimes I can’t believe that you exist at all. Judy Olson, I am so thankful to have had the opportunity to work with you and to learn from you – you had such a great influence on my trajectory at UCI and I cherish the research values that you instilled in me. Gillian Hayes, if it weren’t for you sharing that first article with me, this dissertation would have taken a completely different shape. Thank you for the foresight and for always caring so much about your students (even when they aren’t technically your own). Candice Odgers, I am thankful for your valuable input to this project and for your highly welcomed return to UCI. To the LUCI lab, including the researchers who keep it running today and those who built it up before us, I am forever thankful to have worked with such kind, curious, and dedicated people. To anyone and everyone who contributed in any way throughout this journey, thank you for every piece of help, guidance, and/or support. Lastly, I would love to thank all of the parents and teens who took the time out of their busy lives to come to the university and to participate in this project. Thank you so much for sharing your extremely insightful ideas, feelings, and experiences. I learned so much from all of you, including the beauty of family relationships and the amount of love and care shared between parents and teens.

TABLE OF CONTENTS

	Page
LIST OF FIGURES	v
ACKNOWLEDGMENTS	vi
CURRICULUM VITAE	vii
ABSTRACT OF THE DISSERTATION	ix
INTRODUCTION	1
CHAPTER 1: Related Work	8
CHAPTER 2: Methods	29
CHAPTER 3: Mobile Phone Concerns	41
CHAPTER 4: The Effect of Mobile Phone Presence on Parent-Child Interactions	74
CHAPTER 5: Interpersonal Parent-Teen Conflict and Mobile Phones	136
CHAPTER 6: Conclusion	196
REFERENCES	214
APPENDIX A: DIFFERENCES/SIMILARITIES BETWEEN PREVIOUS WORKS	230
APPENDIX B: EXPERIMENTAL PROCOTOL	233
APPENDIX C: EXPERIMENTAL QUESTIONNAIRES	235
APPENDIX D: INTERVIEW CODEBOOK	257
APPENDIX E: DEFINITIONS	260
APPENDIX F: MOBILE PHONE PROBLEM USE SCALE	261
APPENDIX G: SMARTPHONE ADDICTION PRONENESS SCALE (SAS)	262
APPENDIX H: PROBLEMATIC USE OF MOBILE PHONES SCALE (PUMP)	263
APPENDIX I: HOOPER & ZHOU MOBILE PHONE SURVEY	264

LIST OF FIGURES

		Page
Figure 1.1	Visualization of interconnected mobile phone research	8
Figure 2.1	Inclusion of Others in Self Scale	35
Figure 5.1	Full model of mobile phone parent-teen conflict	139
Figure 5.2	Stage one of mobile phone parent-teen conflict	140
Figure 5.3	Stage two of mobile phone parent-teen conflict	177
Figure 5.4	Stage three of mobile phone parent-teen conflict	182
Figure 5.5	Stage four of mobile phone parent-teen conflict	188
Figure 5.6	Model of mobile phone parent-teen conflict	191
Figure 5.7	Example of mobile phone parent-teen conflict	192
Figure 5.8	Influential factors in model of mobile phone parent-teen conflict	193

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Mazmanian, M. & Lanette, S. (2017). "Okay, One More Episode": An Ethnography of Parenting in the Digital Age. *ACM Conference on Computer Supported Cooperative Work (CSCW)*. Honorable mention.

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Simpson (Lanette), S., Schwartz, N. H., Galilée, M., & Tarbeeva, N. (2013). The influence of presentation rate and sequence of visualizations on recall and decision-making. In M. Lippmann (Chair), *Comprehension, judgment & the assignment of guilt: the role of*

visualizations in litigation law. Symposium conducted at the meeting of the European Association for Research on Learning and Instruction, Munich, Germany.

Palmer, S., Vang, T. J., Bess, Baize, H., Moore, K., De La Torre, A., Simpson (Lanette), S., Holbrook, K., Wilson, D., Gonzales, J. (2011). Implementing Culture-Based Wraparound. In E. J. Bruns & J. S. Walker (Eds.), *The Resource Guide to Wraparound*. Portland, OR: National Wraparound Initiative, Research and Training Center for Family Support and Children's Mental Health.

Palmer, S., Bess, G., Vang, T. J., Baize, H., De La Torre, A., Gonzales, J., Holbrook, K., Moore, K., Simpson (Lanette), S., Wilson, D. (2010). Culture-based wraparound at connecting circles of care. *Research Highlights*, December 2010, 1-6.

ABSTRACT OF THE DISSERTATION

The Mere Presence of Mobile Phones During Parent-Teen Interactions

By

Simone Lanette

Doctor of Philosophy in Informatics

University of California, Irvine, 2018

Associate Professor Melissa Mazmanian, Chair

In a mixed-methods approach of experimental and qualitative methods this dissertation examines the effects of the mere presence of mobile phones during parent-teen interactions and explores the role of mobile phones in everyday family life. Experimental design was a modification of previous works studying adult dyadic interpersonal interactions in the presence of mobile phones. Experimental data on the reported experiences of conversation quality, conversation closeness, and conversation partner listening in the presence or absence of mobile phones (parents' phone, child's phone, both phones, stranger's phone, and no phone) provide empirical insight into current academic and social narratives that mobile phones are damaging interpersonal relationships. Results suggest that the mere presence or absence of mobile phones does not produce significant effects for parents' or teens' reported conversation quality or conversation partner listening. However, the mere presence of mobile phones did coincide with a significant decline in parents' reported conversation closeness when mobile phone saturation was high (both child and parent's phone present). Interview findings suggest

that this difference could be representative of natural distancing that occurs during adolescence and that phones can become a symbol of teens' increased independence. Qualitative data regarding the role of mobile phones in family life suggests that both parents' and teens' possess widespread concerns of mobile phone use. I trace the origin of these concerns to mobile phone addiction narratives and explore how internalization of such media messaging could have an effect on individual well-being and family dynamics. I also explore how mobile phone concerns were reported during parent-teen descriptions of conflict and analyze the processes of parent-teen mobile phone conflict. From these data, I develop a model of parent-teen conflict to inform future work on mobile phone conflict mediation. This study has implications for parent-teen dynamics around technology use in the home and calls for the creation of more robust metrics designed to assess mobile phone use.

INTRODUCTION

In a recent survey, 100% of adults in the United States aged 18-29 reported owning a mobile phone ¹ of some variety (smartphones were 94% of this ownership) (Pew, 2018). Teens have been reported to receive their first mobile phones as young as eight years old (Nielsen, 2018). Increasing work, social, and connectivity demands enacted through mobile phones have made it nearly impossible to forgo owning a mobile phone. As mobile phone ownership reaches saturation across all age groups, the ubiquity of mobile phones cannot be denied. However, our understanding of the psychological and social impacts of mobile phones remains limited.

The introduction of the smartphone increased the opportunities for continual information access and the ability to stay connected to friends, family, and the world. As smartphones became further integrated across several aspects of daily life (e.g., work, finance, commerce, social, education, etc.), the increased possibilities for time spent on mobile phones expanded. However, this expansion occurred with minimal understanding of the potential diverse and unintended consequences of being constantly connected. With the rise in considerable time spent on such devices, researchers and mobile phone users have grown increasingly wary about the effects of living in a modern smartphone infused society. Arriving at existential questions such as: How might the presence and use of smartphones be affecting: our lives (Hingorani et al., 2012)? our sense of wellbeing (Magsamen-Conrad & Greene, 2014)? our productivity (Kalkbrenner & McCampbell, 2011)? our relationships (McDaniel & Coyne, 2016)?

¹ Although smartphones represent the bulk of mobile phone ownership in 2018, this dissertation refers to all phones as “mobile phones” in an attempt to be inclusive of prior research on mobile phones and to be inclusive of participants in the study who owned a mobile phone, but not a smartphone.

As researchers have begun to explore these issues, findings remain mixed and difficult to interpret. The immense complexities of using and living with mobile phones in the digital age also makes interpreting these findings problematic. It is challenging to parse effects within such complex use patterns and diverse opportunities for mobile phone use. For example, in 2017 the Google Play Store was reported to host 2.8 million mobile phone apps, with applications ranging from formal healthcare and education services to more informal use cases such as gaming and social media (Statista, 2017). The lack of scientific consensus of mobile phone effects has not stopped the mainstream media from using scholarly research to propel the message that mobile phones are a danger to the social fabric (Huffington Post, 2014; The Independent, 2017; Greater Good Magazine, 2015), to mental and physical health (CNN, 2018; CNN 2017; Wall Street Journal, 2017; PsychCentral), and to the success of our youth (The Telegraph, 2009; NPR, 2017; The Atlantic, 2017).

Articles such as “Are Smartphones Killing Our Conversation Quality?,” “How Your Cell Phone Hurts Your Relationships” and “Your cell phone is ruining your relationship — just by being in the room: study” (Live Science; New York Daily News; Scientific American) cite two studies (Misra et al., 2014; Przybylski & Weinstein, 2013) that suggest mobile phone presence negatively affects relationships and quality of interpersonal interactions. Such media articles put forth messages of anxiety and disaster for interpersonal success of interactions. Other articles such as “Have smartphones destroyed a generation,” “iPhones and children are a toxic pair, say two big Apple Investors,” and “Teenage depression and suicide are way up—and so is smartphone use” perpetuate the claim that smartphones are destroying our children both mentally and

physically (Wall Street Journal, 2018; Washington Post, 2017). Online petitions such as “Wait Until 8th” encourage parents to protect their children from such destructions by postponing giving smartphones to children until at least 8th grade and by pressuring other parents at their children’s school to do the same.

The two relationship studies cited above are often used in media articles to perpetuate the message that mobile phone presence hurts reported quality of adult interpersonal interactions (Misra et al., 2014; Przybylski & Weinstein, 2013). This dissertation seeks to test, build on, and expand findings present in these studies, using parent and teen interactions as the focus of analysis. Misra and colleagues’ along with Przybylski and Weinstein’s findings that the mere presence of mobile phones is hindering the quality of interpersonal interactions are compelling. Yet, replications of these findings are limited.

Despite the current lack of strong evidence, scholars have accepted wholesale that mobile phones are an issue in interpersonal interactions and often communicate such findings to the general public and other researchers as objective truths. The voice of Sherry Turkle (2016) in particular has wide reach in setting the conversation about mobile phone presence. In her 2012 book, “Alone Together: Why We Expect More from Technology and Less from Each Other” and her 2016 book “Reclaiming Conversation”, Turkle uses her psychology background and observations to argue that mobile phones are a danger to interpersonal relationships. Other public intellectuals, such as professor Jean Twenge, have also warned about the effects of mobile phones. Twenge (2017) correlates mobile phone use to children’s development in her book: “iGen: Why Today’s Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy – and

Completely Unprepared for Adulthood” and blames mobile phones in her recently popular Atlantic piece for the “[destruction of] a generation” (2017). As a result, concern for mobile phone use is linked to credible sources that support mobile phones as a concern and thereby furthers the narrative that mobile phones are detrimental to society.

If the negative effects of the mere presence of mobile phones are accurate and generalizable to other groups, such as to parents and teens, mobile phone presence becomes a concern for family wellbeing and society at large. To analyze the presence of potential effects with parents and teens, I designed a large (N = 242) mixed-methods replication and modification of Misra and colleagues and Przyblyski and Weinstein’s adult dyadic research. Through the addition of qualitative interviews, this dissertation also explores potential limitations and confounds of prior work and provides insight into the contextual nature of device usage within families.

This project examines the way we think about *personal* digital devices in the context of *family* wellbeing by addressing the following research questions. These questions were designed to explore a sample of parents’ and teens’ experiences with mobile phones in both (1) experimental conditions and (2) retrospective accounts of day-to-day family interactions. Research questions include:

1. Does the mere presence or absence of mobile phones have an influence on parent-teen interactions? If so, how so? If not, why not?
2. How do parents and teens make sense of their personal mobile phone use within the family?

3. How do parents and teens make sense of their respective parent-teen mobile phone use within the family?

In Chapter 1: Related Work, I examine how the mere presence of mobile phones within parent-teen interactions is situated within three streams of research: (1) individually focused, (2) interpersonally focused, and (3) family focused fields of research. In particular, I critique existing confirmatory mobile phone research methods and show how they have been used to perpetuate the narrative of mobile phone addiction and harms (Billieux et al., 2015). I also outline more exploratory mobile phone research results to ground my interpretation of dissertation findings. In addition, I draw upon family systems and adolescence research to contextualize dissertation results within the broader psychology of family interaction research.

In Chapter 2: Methods, I outline how this dissertation is a mixed-methods replication and modification of Przybylski and Weinstein's laboratory mobile phone studies and Misra and colleagues' observational coffee shop study (Misra et al., 2014; Przybylski & Weinstein, 2013). The inductive methods in this dissertation are outlined to explore *what* is happening in the space of mobile phones and *why*.

In Chapter 3: Mobile Phone Concerns, I examine how the mobile phone addiction narrative is resulting in unintended negative consequences for the general public. I explore how qualitative survey and interview data suggests that participants often use negative media narratives when attempting to make sense of mobile phone use practices,

both for themselves and for others. I then examine how this finding is also associated with increased mobile phone reported concerns, guilt, and/or shame.

In Chapter 4: The Effect of Mobile Phone Presence on Parent-Child Interactions, I outline quantitative findings from the experimental portion of the study and qualify these findings with supplementary qualitative insights from interviews. Contrary to prior findings, the mere presence or absence of mobile phones was found to have little effect for parents' and teens' reported experiences of conversation quality and reported experiences of conversation partner listening. However, for the non-verbal question of closeness (embodied question of closeness represented by Venn diagrams of increasing closeness), parents reported significantly lower experiences of conversation closeness when phone saturation was high (e.g., both phones present). Possible explanations for these findings and limitations of the study design are explored in Chapter 4 and Chapter 6.

In Chapter 5: Interpersonal Parent-Teen Conflict and Mobile Phones, I examine reported origins and experiences of mobile phone conflict for parents and teens and develop a model of parent-teen conflict based on these data. This model is used to outline how and when mobile phone conflict was reported to occur and suggests potential conflict intervention and conflict mitigation strategies for parents and teens.

In Chapter 6: Conclusion, I outline how this dissertation furthers our understanding of mobile phones within parent-teen interactions in our current day and age. I explore the impact of negative media messaging and confirmatory research approaches on parent-teen relationships, interpretations of phone use, and experiences of

well-being. I also outline how mobile phone conflicts could be avoided between parents and teens, I provide potential explanations for the lack of replicability to prior works, and I end with suggestions for future mobile phone research.

As a whole, this dissertation provides evidence to contradict previous negative findings of mobile phones for interpersonal relationships and calls for more exploratory measurements, tools, and treatments for problematic mobile phone use.

CHAPTER 1: Related Work

The following review of existing mobile phone research combines findings from individually focused, interpersonally focused, and family focused mobile phone related areas of research. A visualization of how these research areas co-exist within parent and teen interactions is illustrated below (Figure 1.1). This visualization is meant to illustrate the ways in which these different streams of scholarship relate to provide an overview of how research in this literature review is connected. Individual mobile phone research is used to inform how individual interpretations of phone usage might influence experiences of interpersonal interactions in the presence of mobile devices. Interpersonal mobile phone research is synthesized to inform how this dissertation was designed and to identify knowledge gaps in existing interpersonal research. Lastly, prior research exploring mobile devices within families, as well as historical family systems research, is used to ground my analysis and interpretations of mobile phones within parent-teen relationship dynamics.

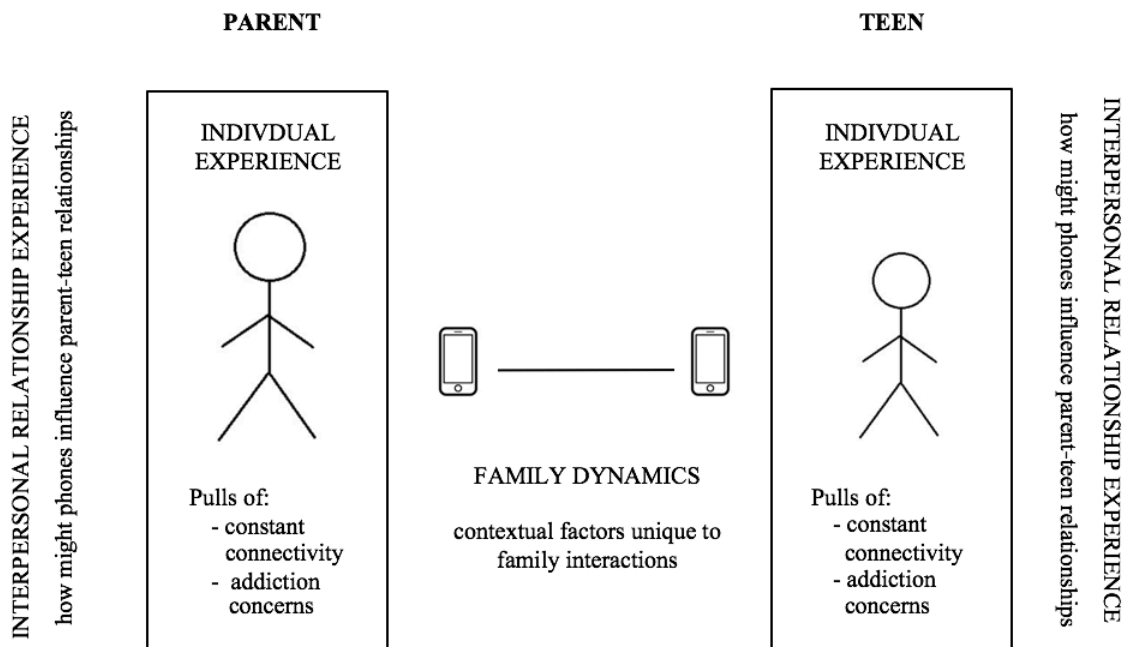


Figure 1.1 Visualization of related work

INDIVIDUALS AND MOBILE PHONES

There currently exists a substantial amount of research regarding how mobile phones are used and how these use practices affect individuals' productivity, mental health, physical health, etc. (e.g., Panova & Lleras, 2016; Roberts et al., 2015; Stothart et al., 2015). It is in our best interest to remain aware, reflective, and evaluative of the potential unintended consequences associated with the incorporation of various technological advancements into daily life. However, results from these studies are often repurposed in the media to further narratives of the negative impact that mobile phones are having on individuals and society. In particular, mobile phone addiction research is regularly used in support of the narrative that "Phone Addiction is Real – And So Are Its Mental Health Risks" (Forbes, 2017). However, the design and resulting interpretations of mobile phone addiction studies often reflect widespread concerns and *assumptions* of how mobile phone addiction might manifest. The unknown nature of lifelong considerable mobile phone use can reinforce these concerns (George & Odgers, 2015), but the problematic nature of the assumptions often present in these research methods is discussed below.

Mobile phone addiction research

Historically, mobile phone addiction research methods have often taken a confirmatory approach to assessing mobile phone addiction (Billieux et al., 2015). These approaches are considered confirmatory as researchers often begin with the assumption that mobile phone addiction exists, and then set out to assess the presence of this addiction. By design, the assumptions embedded in this strategy lends researchers to perpetuate negative *perceived potentials*, rather than exploring more *objective experiences*

of use situated within the complexity of mobile phone functionality and varying motivations for use.

In the current Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5), mobile phone addiction is not recognized as a pathology (APA, 2013). Yet, mobile phone addiction is considered a phenomenon by a growing number of researchers² (Bianchi & Phillips, 2005; Chen et al., 2016; Hooper & Zhou, 2007; Kim et al., 2014; Merlo et al., 2013; Roberts et al., 2015; Smetaniuk, 2014 – examples of metrics located in Appendix F-J). Researchers have sought to measure the presence of phone addiction often by borrowing measurements developed to assess other behavioral addictions, such as gambling, and have applied these metrics to mobile phones in order to do so (Billieux et al., 2015). The logic required is that behavioral addictions would similarly present themselves across disorders.

As a consequence, these scales do not capture the unique motivations underlying mobile phone use or the role of phones in various social arenas. For example, one of the most cited measurements used to assess mobile phone addiction presence is the 27 ten-point Likert Mobile Phone Problem Use Scale (Bianchi & Phillips, 2005). Although this measurement was published in 2005, two years before the release of the first iPhone in the United States, it is still being used to support smartphone addiction work today (Foerster et al., 2015; Lopez-Fernandez et al., 2014; Sapacz et al., 2016). The scale (located in Appendix F) includes questions such as “My friends and family complain about my use of the mobile phone” or “I have been told that I spend too much time on my mobile phone.” Responses to

² Despite the concept of technology addiction originating in a satirical piece written by Ivan K Golberg in 1995, rather than arising from deeper qualitative or quantitative work (Golberg, 1995).

these questions are difficult to parse given the ubiquity of mobile phones. People are stuck between widespread assumptions of constant connectivity and active negotiations of social norms around appropriate use in the presence of others (Mazmanian & Erickson, 2014). Therefore, scoring high on these questions could reflect social norms and pressures to be digitally connected, rather than signifying the presence of a pathology.

Other questions such as “All my friends own a mobile phone” are particularly outdated with 95% of American adults, and 100% of adults aged 18-29, reporting ownership of a mobile device in 2018 (Pew Research Center, 2018). Several questions are posited without the necessary context or perspective to understand “addictive” phone use behaviors. For example, the question “I have attempted to spend less time on my mobile phone but I am unable to” could actually be more reflective of obligatory family or work demands (e.g., coordination, communication, care) (Mazmanian & Erickson, 2014), rather than a clinical disorder.

A more recent measurement (located in Appendix G), published in 2014, is a fifteen-question Smartphone Addiction Proneness Scale (SAPS) (Kim et al., 2014). Yet, again, questions often lack the necessary contextual understanding to differentiate between “good” versus “bad” phone behaviors. For example, the question “When I cannot use a smartphone, I feel like I have lost the entire world” could be interpreted by someone that they have lost *access* to the rest of his or her human connection in the world (e.g., a parent might feel unable to access their children and feel disconnected from their children without their mobile phone). This logic makes sense, as mobile phones have increasingly become the mobile access point to the rest of the world. Perceived tolerance to the device is measured by questions such as, “Even when I think I should stop, I continue to use my

smartphone too much” and “Spending a lot of time on my smartphone has become a habit.”

High responses to these questions could also reflect internalized fears of smartphone addiction, – when every glance at the smartphone is purported by the media to damage one’s children, health, and sanity, then any amount of use can be seen as “too much.”

Addictive narrative in the media

Mainstream media often uses descriptive measures found in smartphone research to illustrate the addiction narrative. Examples include a CNN article on “What Your Personality Says About Your Smartphone Addiction” (2016) which uses statistics from four separate studies to make the claim that, “79 percent of us reach for our phones within 15 minutes of waking, 68 percent sleep with them, 67 percent check our smartphone even when they’re not ringing or vibrating and 46 state that they cannot live with their smartphones.” While these numbers are compelling, they can easily be misinterpreted without the necessary context. For example, do people reach for their phones when waking because their phone is their alarm? Can people not live without their phones because they need them for work? Or they assist them with a disability? Or they need them for potential family emergencies? Without understanding these contextual variables, it is difficult to assert that such findings are illustrations of problematic or damaging smartphone use – no less “addiction.”

Other examples of disastrous outcomes of smartphone use perpetuated by the media include harms to productivity such as “3 Ways Your Smartphone Wrecks Your Sanity, Productivity, And Focus” (Business Insider, 2014), and links to various mental health disorders such as “Your iPhone Is Making You Depressed” and “Heavy Smartphone

Use Can Lead to Depression, Anxiety” (Huffington Post, 2015; Tech Times, 2015).

“Addiction” has become a central media trope in both communicating these findings to the general public and distorting such findings in service of a broader addiction narrative. As a result, users are bombarded with the idea that “excessive” smartphone use may result in negative consequences such as doing poorly at one’s job, eroding important relationships, and developing various mental health disorders. Unfortunately, questions about what is “excessive” use, how context and circumstance play into experiences of use, and the validity of assessment measures are generally absent from these claims. In Chapter 3, I explore how these addiction narratives present themselves in individual’s interpretations of mobile phone use and I examine the role that they play in parent-teen interpretations of family member’s use.

Internalizations of the Media Addiction Narrative

The potential influence of mainstream media discourse cannot be underestimated in relation to users’ overall well-being. Numerous scholars have explored the effects of media discourse and narratives on individuals and society (Fiss et al. 2005; O’Connell & Mills 2003; Polletta and Callahan 2017). In particular, reflexive modernity theorizes that media can shape the ways in which individuals make sense of and experience themselves as well as their surroundings (Beck et al., 1994).

James Gee takes a similar perspective in his injunction that discourse analysis should be accompanied by an attention to ‘figured worlds.’ Figured worlds, or the shared “picture of a simplified world that captures what is taken to be typical or normal,” (Gee p. 71) are perpetuated through media messaging. In delineating the differences between what

people say they believe (espoused worlds), the stories of daily life that shape how we judge ourselves and others (evaluative worlds) and the theories of the world that consciously or otherwise guide our actions (worlds-in-(inter)action), Gee provides a framework for understanding how widespread media messaging can shape our beliefs, judgments, and actions (Gee P. 90).

In a 2016 survey of parents and teens, 50% of teens self-identified as being “addicted” to their smartphone (CNN, 2016; CSM, 2016). Attention to the possible effects of the smartphone addiction narrative suggest that such findings should be questioned. It is possible that these results are a reflection of the prevailing discourse of smartphone addiction rather than an accurate portrayal of clinical addiction or even problematic use. From this point-of-view, the question becomes less about how many people see themselves as “addicted,” but whether people are internalizing this message of widespread smartphone “addiction;” and, if so, the effects that such internalizations have on individuals and families. In Chapter 3, I explore how the narrative of addiction could be inflicting more harm than the actual use of mobile phones themselves – as individuals living in a mobile phone saturated world are provided with such narratives when attempting to make sense of personal mobile phone practices.

Internal and External Rewards

There are both internal and external rewards associated with mobile phone use. Research suggests that neurochemically, dopamine is released when we experience new incoming information, such as email or text messages (Berridge & Robinson, 1998). Dopamine release acts as a reward to an individual’s nervous system and acts as a positive

reinforcement to repeat the behavior that provided the dopamine (Vaghefi & Lapointe, 2014). The more we become connected online, the more we tend to engage in seeking information behaviors to elicit the same dopamine response. This reward system can, in part, explain the desire to have mobile phones visible during activities when the phone is not required and the potentially distracting effect of mobile phone presence.

Even in the absence of individual mobile phone engagement, mobile phones can still induce a cognitive presence that varies in degree between individuals. For example, the physical presence of a device can often serve as a conditioned stimulus of distraction (Turkle, 2011; Ling & McEwen, 2010). Therefore, even if an individual is physically present, there is a potentiality that they are cognitively distant in the presence of their mobile device, regardless of physical use (May & Hearn, 2005).

This phenomenon could also contribute to the sense of “absent presence” that can arise in the presence of an individual and his/her mobile device (Gergen, 1991). Absent presence is experienced when an individual is physically present, but their mind is “absent” through focusing and devoting attention to elements outside of their physical environment. Turkle (2011) reports that when she asked a group of individuals “when was the last time you felt that you didn’t want to be interrupted?” not one person could think of a moment. For teens who have never experienced a world without mobile phones, the experience of absent presence is even more naturalized (Bauerlein et al., 2011). Technology has always been a part of their lives. There is no comparison of a non-connected world to shape their attitudes and beliefs about experiences of absent presence. Rather, experiencing absent presence is the norm.

Mobile phones can also provide various external rewards. For example, enabling location services on mobile phones or “checking-in” to locations has been used by businesses and applications to provide external rewards to customers (Patil et al., 2012). Restaurants use these reward systems to provide discounts for mobile phone location data and businesses provide free services in exchange for location data. Workplace demands associated with mobile phone response times can also be used to institute external rewards and punishments (Cavazotte, 2014). The need to be constantly available for work is discussed further in the section “Constant Connectivity and Evolving Social Norms.”

INTERPERSONAL RELATIONSHIPS AND MOBILE PHONES

Our current understanding of ICTs, in particular mobile phones, and the effects they have on interpersonal relationships, is limited. At the individual level, Walsh and colleagues (2010) make a distinction between the cognitive and behavioral factors that comprise an individual’s involvement with their smartphone, an important aspect of interpersonal interaction. Cognitively, these factors involve all thoughts pertaining to the phone that evoke emotions regarding the potential use or inability to access the phone (e.g., craving to check the device, anxiety or depression if unable to access device, etc.). Behaviorally, these factors include all physical activities involving contact with the device (e.g., checking the device often, keeping the device visible at all times, etc.). Therefore, mobile phones are not *merely* physically present during interpersonal interactions. Prior work that explores the role of mobile phones in interpersonal relationships is outlined below.

Mobile Phones and Romantic Relationships

In 2014, McDaniel and Coyne found that 75 percent of females (n =143) in romantic relationships stated that mobile phones interfered to some degree during their partner interactions (including “sometime,” “often,” “very often,” or “all the time”). In the same year, research also found that use of mobile devices only correlates with a decline in relationship satisfaction when the mobile phone usage *results in conflict* (Coyne et al., 2014). Understanding the origins of this conflict is complex. McDaniel and Coyne (2014) argue that conflict can arise if one partner thinks they are not receiving the attention they think they deserve from their partner. In this case, the mobile phone can literally be the reason that attention is being shifted. At the same time, after repeatedly experiencing shifts in attention in the presence of a device, the mobile phone can become associated with these shifts. If this association is established, the mobile phone can begin to serve as a symbol (or conditioned stimulus) of an attentional pull. Thus, this association can result in a feeling of absent presence previously outlined in individual mobile phone research.

Roberts and David (2016) investigated the occurrence of this type of phone snubbing, deemed “Phubbing”, during romantic relationships. Results indicated that while 46.3 percent of participants reported that their partner engaged in Phubbing behavior, only 22.6 percent of participants reported that this Phubbing resulted in any relationship conflict. This relatively low incidence of perceived conflict is interesting, provided that snubbing of any origin could be assumed to result in potential relationship conflict. Currently, research has focused on the presence of distracting phone behaviors during romantic relationships (e.g., phubbing) but little research has been done on how this mobile phone involvement might influence the reported quality of parent-teen relationships and *why*.

Constant Connectivity and Evolving Social Norms

On the other end of the research spectrum, researchers using a more exploratory approach to mobile phones have provided insights into the experience of mobile phone ownership in a society of ubiquitous mobile phone use. For example, it has been observed that by not restricting users to a confined space, mobile phones have enabled individual users to participate in a state of “constant connectivity” (Mazmanian et al., 2013). In this state, individuals have control over when and how they are connected, but the constant ability to connect, as well as to receive information from others, can result in a perpetual state of connectivity.

Research has explored how the potential for connectivity provided by mobile phones informs social norms around ‘availability’ that often guides individual behavior and influences interpretations of other’s use (Mazmanian & Erickson, 2014). This work suggests that as smartphones have become normalized, a “prevailing economic value on total availability” has emerged. Further, the more we make ourselves consistently available, the more we expect others to reciprocate (Mazmanian & Erickson, 2014). For example, being responsive and easily accessible in the workplace has increasingly become standard adult work practice. In order to maintain this availability, smartphone usage at home for work has increased (Mazmanian & Erickson, 2014). In light of this – even when individuals are not directly interacting with work on their mobile phone – they are constantly aware that work may arise that could need their attention. The possibility that work will require attention exists simultaneously with numerous other personal possibilities that may require attention all through the mobile phone. Individuals are not expected to attend to

one task at a time; rather, they are expected to attend to all requests at once (Mazmanian & Erickson, 2014).

Individual cognitive and behavioral patterns of smartphone involvement must also be understood within evolving cultural norms of “appropriate” mobile phone behavior. It is possible that an individual’s perceived relationship quality is affected by mobile phone usage only when there is a discord of cultural norms between relational partners (Hall et al., 2014). Therefore, if two individuals share a similar understanding of norms and behavior around appropriate connectivity, it could be predicted that their perceived interaction quality is unaffected by mobile phone use. Co-orientation theory argues that perceived relational closeness is influenced by the extent that two partners identify their attitudes and behaviors as being similar (Newcomb, 1953). Hall and colleagues (2014) explored this theory with sixty-nine dyads regarding their reported smartphone usage, perceived societal norms, individual internal norms, and perceived partner’s norms. Results indicated that relationship quality was not affected by adherence to societal norms. Instead, relationship quality was influenced by the perceived similarity of their partner’s norms to their own personal norms. Additionally, it was important that participants perceived that they themselves adhered to their own personal norms.

Thus, societal norms surrounding smartphone usage do not necessarily dictate “acceptable” behavior. In an interpersonal dynamic, acceptable behavior is more dependent on certain group dynamics and the negotiation of smartphone norms within the group. These differences range across various, “social groups, genders, generations, relationships, and cultures...and may or may not be followed in any given moment depending on whether a norm is focal” (Hall et al., 2014, p135). In order to examine the

nature of nuclear families to develop and possess familial norms, I explore how family mobile phone norms, or lack thereof, are reported to influence instances of conflict and/or resentment in Chapter 5. In the same chapter, I also explore how developing explicit family norms was reported to be beneficial to some families.

Violation of Expectations

Expectancy violation theory research indicates that norm violations are met with judgments of the violator (Hall et al., 2014). Therefore, individuals in new scenarios must navigate the complexities of various group norms and thereafter follow these norms if they do not desire conflict over mobile phone usage to arise. Negotiations must be made between group members that can then adjust the behavior of all group members and establish a new social norm (Brown, 2002). The process of this negotiation is continual and is not necessarily conscious or explicit. Awareness can arise, but generally this is due to a conflict or misunderstanding of negotiations that impact the social dynamic (Brown, 2002). Chapter 4 addresses how avoiding expectancy violation was reported to influence behavior and interpretations of the experiment itself across participants.

FAMILIES AND MOBILE PHONES

In 2010, the Kaiser Family Foundation reported that American adolescents were using media for over seven hours per day. Time spent using “media” was defined as any time associated with TV content, music or audio, computer use, mobile phones, video games, print (e.g., books, newspapers, magazines), and movies. Results indicated that adolescents between the ages of eight to eighteen allocated more time to media

consumption than, “any other activity besides (maybe) sleeping” (Kaiser Family Foundation, 2010). The amount of media usage reported by adolescents has continued to rise across time, with “20% of media consumption [reported to occur] on mobile devices” (Kaiser Family Foundation, 2010). By 2015, Common Sense Media found that on average teens expanded their time spent to include nine hours per day.

For mobile phone ownership, sixty-six percent of children aged eight to twelve years old owned smartphones in 2010 (Kaiser Family Foundation). By 2015, the Pew Research Center reported that this number had risen to “nearly three-quarters of teens [owning] or [having] access to a smartphone.” Teenagers often report that they sleep with their mobile phones and that they are constantly aware of the status of their phone (e.g., if a message has arrived, where the device is located, etc.) (Turkle, 2011). The increasing use and presence of mobile phones, combined with the limited understanding of their effects, has increased parental concerns of mobile phones and has altered family dynamics (Ito et al., 2008).

Technology and shifting family dynamics

Research supporting the problematic effects of technology use has increased in tandem with the rise in time spent on devices. Such research often implies causal relationships between the use of media and issues such as teen suicide and depression rates (Twenge, 2017). Presented with such research findings, programs and sentiments similar to the “Wait Until 8th” initiative often support the complete removal or reduction of technology use to protect children’s wellbeing. Parents are thus left with societal and social pressure to develop and maintain family technology rules (Mazmanian & Lanette, 2016).

The development of family rules, expectations, and policies surrounding media usage is a complex research area that has explored various methods, attitudes, and enactments supporting media rule decisions and resulting outcomes (Blackwell et al., 2016; Carvalho et al., 2015; Hinkiker et al., 2016; Mazmanian & Lanette, 2016; Yardi & Bruckman, 2011). Parents can become conflicted when they understand that media can be used as a positive resource (e.g., homework, learning, constructive socializing, etc.), but they also want to avoid exposing their children to inappropriate media consumption behaviors (e.g., accessing inappropriate content, media abuse, etc.).

The increasing presence of technology in the home has been found to alter family dynamics (Ito et al., 2008). A review of technology and family functioning literature between the years 1998 and 2013 found that new technologies resulted in changes in family functioning, or the extent of healthy and positive interactions within the home (Carvalho et al., 2015). For example, new technologies have created different ways for parents and children to interact (e.g. texting as a means to keep in constant contact, playing video games to spend time together). These technologies have also altered the presence of strict boundaries between family members (e.g., information is more accessible to all family members, things are less capable of being hidden) and altered family cohesion (e.g., bringing families closer together with shared and positive technology use, reducing family cohesion by technology overuse).

The wide variation in how technology use can affect family functioning is related to several different factors. For example, the types of technology used and how and when technology is used (e.g., media use supporting co-viewing and media intended solely for personal use). In addition, the manner of use and feelings related to use are influenced by

factors such as culture, socioeconomic status, and family structure (e.g., single parent, number of siblings, etc.) (Carvalho et al., 2015). As a whole, family technology research findings remain mixed (Carvalho et al., 2015). Even the same technology use patterns can have vastly different effects on different families. Therefore, we must consider specific family dynamics to appropriately interpret any associated technology use outcomes.

Family contextual information is also necessary when we interpret mobile phone attitudes and behaviors. For example, mobile phones and their relationship to family functioning have been shown to have a positive influence on certain spheres of parent-child interaction. Parents and children report that it enables a sense of connection, an ability to monitor safety, and facilitates help in emergency scenarios (Carvalho et al., 2015). This increased connectivity between family members can be positive. However, the capacity for increased connectivity carries numerous implications beyond direct parent-child interaction. Each and every mobile phone user becomes obligated to communication partners in new ways and must navigate the various relationships in their lives in light of the potential for constant connectivity. Our understanding of how, why, when, and for what types of family dynamics mobile phones can result in positive or negative interpersonal interactions between parents and children remains limited. Chapter 5 explores the positive and negative articulations of everyday familial mobile phone presence described in post-experimental interviews.

Adolescents and Parent Relationships

Exploring the influence of mobile phones on reported quality of the relationship between parents and children is rooted within the larger context of classic parent-teen

dynamics. As children age there is a natural progression away from parents that occurs, at least in western cultures (Larson et al., 1996). In an experience sample study of 16,477 random moments, 220 children aged 10-18 years old were found to reduce time spent with their family “from 35% to 14% of waking hours” of their days (Larson et al., p. 744, 1996). Researchers have found that the reduction in time spent with family was often related to activities outside of the home (e.g., sports, homework, extracurricular, etc.). However, solitary pursuits are also a fact, “in early adolescence, diminishing family time was replaced by time spent alone at home” (Larson et al., p. 752, 1996).

Christensen and colleagues (2002) found through a large ethnographic study of seventy children that most children (ages 10-11) reported that they did not want to spend more quality time interacting with their parents. Instead, “there was a general consent among children that knowing that their parents would be there for them when they needed them was of much greater importance” (Christensen, p. 83, 2002). This evolution of family dynamics as children reach adolescence is important to consider when interpreting the experience of mobile phones within the family. For example, it is possible that parents attribute disengagement during early adolescence to mobile phone use, when disengagement would occur regardless of the presence of a mobile phone. It is also possible from the child’s perspective that the presence of a parent’s mobile phone could elicit feelings of neglect, if the child previously felt ignored by their parents during perceived times of need and had attributed this parental absence to the device. Alternatively, children could feel higher levels of support from parents during the independence shift that occurs during adolescence if parental accessibility is experienced through the device. Chapter 5 explores how these thorny issues presented themselves during qualitative interviews and

analyzes parent teen reported attitudes and beliefs surrounding mobile phone use and presence during parent-teen interactions.

Adolescents and Parent Conflict

The experience of parent-child conflict is common during adolescence and there exists several psychological, anthropological, and sociological theories to better understand the purpose and origins of parent-adolescent conflict (Leigh & Peterson, 1986; Arnett, 2014). There also exists several definitional components and theories of what constitutes “conflict” within parent-teen dynamics. For the purpose of this dissertation and due to the behavioral nature of mobile phone use, I focus on conflict as it is defined as a “behavioral opposition” that occurs between parents and teens (Laursen & Collins, 1994). A behavioral opposition requires that there are two actors, A and B, where A does not comply with the behavioral requests or demands of actor B.

Although the experience of conflict within families is highly complex, theories have outlined possible influences to family conflict (Arnett, 2014). For example, the speed of social change has been found to increase possibility of conflict when parents and children have experienced extremely different developmental worlds (Arnett, 2014). As social words and technologies differ, parents and teens are provided with diverse life experiences and as a consequence divergent outlooks and lenses through which to view the world. In today’s day and age, this phenomenon could be applied to the presence of mobile phones. Phones have been present throughout the entire lives of teens, whereas their parents have only experienced mobile phones for a portion of their lives (Prensky, 2001).

The longer it takes to for parents to get updated on rapidly changing technologies, the higher the possibility that their children will view their parents' opinions and decision making around devices as "old-fashioned, even obsolete" (Leigh & Peterson, 1986). The more parents can become involved in learning about new devices, practices around use, and values expressed by the younger generation, the higher the likelihood that parents can contextualize decisions and opinions towards devices in a way that can reduce the possibility for intergenerational conflict. The perpetuation of a conflict inducing generational gap between parents and teens is found to be reinforced through a mixture of "incongruent perceptions and expectations" and "inadequate or insufficient conversation" (Laursen & Collins, 2004).

Similarly, research has shown that conflict is more likely to occur when adolescents perceive their parents' control as misguided (Arnett, 2014). More authoritarian parenting styles tend to result in higher levels of conflict when teens do not agree with the logic of parental decision making and are not free to express their opinions in a way that they feel heard. Alternatively, more democratic parenting styles are correlated with the lowest levels of parent-teen conflicts (Leigh & Peterson, 1986). In democratic parent-adolescent relationships there is open communication between parents and teens, thus enabling teens to exercise their autonomy within the parent-teen relationship and to feel heard. It is also within these relationships that adolescents are able to learn positive styles of conflict by engaging in constructive back-and-forth disagreements with their parents (Santrock, 2005). Mirroring positive conflict within the everyday negotiations of life, such as when and how to use one's mobile phone, can therefore serve a positive function for adolescent development. If parents articulate their frustrations with teen mobile phone use in a

constructive manner, teens are able to witness how to share frustrations without escalating conflict. Chapter 5 examines parent-teen conflict within these broader understandings of parent-teen experiences and various motivations for conflict.

How this work furthers our current understanding of mobile devices

Self-report is often used to explore participants' attitudes and feelings towards mobile phones, as well as to understand mobile phone use and exposure. This type of self-report requires an awareness and ability on the part of individuals to recall their experiences with mobile devices, a difficult and often inaccurate task (Del Boca & Noll, 2000; Olson & Kellogg, 2015; Podsakoff & Organ, 1986; Schwarz, 1999; Sudman et al., 1997). Observing technology use in a natural or controlled setting can avoid these issues and provide a more accurate measure of mobile phone presence.

Despite providing more accurate measurements of use and presence, observational and experimental studies often lack a way to explore subjective experience (e.g., in-depth interviews) to understand how participants make sense of the questions or how participants choose to provide a certain answer on a self-report questionnaire. In addition, prior experimental work has involved using a strangers' phone versus using participants' phones (Przybylski & Weinstein, 2013). When mobile phones used in laboratory studies do not belong to participants, the effects from mobile phone presence is representative of a generalized feeling towards mobile phones. However, this experience removes the ability to assess effects from someone's personal phone being present and to analyze the feelings associated with personal device presence. Lastly, adult interpersonal studies do not

produce generalizable results to populations outside of adult interpersonal dyads (e.g., parent-teen dyads).

Summary

The combination of individual, interpersonal, and family systems research provides an overall view of contributing factors occurring during the mere presence or absence of mobile phones in parent-teen interactions. Insights from these research streams are used to guide and inform data analysis and to direct interpretations of findings in reference to prior work. Parent-teen dyads are used to expand our understanding of how different relationships can be affected by the presence of mobile phones (Chapter 4). Parent-teen mobile phone attitudes and beliefs are used to better understand potential factors influencing perceived quality of interactions (Chapter 3 and Chapter 4). Overarching fears of mobile phones are explored to better situate individual interpretations of mobile presence (Chapter 3) and implications for future work are outlined in Chapter 6.

CHAPTER 2: Methods

Study design for this dissertation is a replication and extension of previous research of mobile device presence during adult interpersonal interactions (Misra et al., 2014; Przybylski & Weinstein, 2013). Data emerges from a mixed methods analysis of mobile phone presence during parent-teen interactions. The experimental portion of the study examines quantitative experiences associated with the mere presence or absence of mobile phones during parent-teen interactions. Following the experiment, semi-structured interviews regarding mobile phone presence, both within the confines of the experiment and within the broader context of everyday family life, examine the described experience of mobile phone presence for both parents and teens in the home.

Replication of previous work

Przybylski and Weinstein (2013) designed two laboratory experiments to examine whether the presence of mobile devices influences the perceived quality of interpersonal interactions. In the first study, two adult strangers were told to “discuss an interesting event that occurred to [them] over the past month” for ten minutes. The only difference between groups was the presence or absence of a stranger’s mobile device during the interaction. Results from this study indicated that when a mobile device was present, participants reported lower levels of relationship quality and closeness.

In the second study, participants were again randomly assigned to converse in a phone absent or phone present condition, but they were also randomly instructed to either discuss the (1) most meaningful events of the past year or (2) their thoughts on plastic holiday trees. The results of this change in topic of conversation showed that relationship

quality was only affected when the conversation topic was *meaningful*. Thus, no effect was found when the conversation was casual. Researchers interpreted these findings to indicate that the presence of a mobile device during meaningful conversations of unknown participants can affect the perceived quality of these interactions.

However, the device that was present during these interactions did not belong to either participant in this experimental setting and exit interviews were not conducted to understand why or how the phone was influencing their reported experience. Thus, we cannot strictly conclude from the design of these studies that these findings are indicative of (1) a generalized conditioned stimulus of mobile phone presence hindering the experience of quality meaningful interactions between strangers, OR (2) the presence of an unknown mobile device during an experimental study serving as a distraction and as a result, decreasing positive feelings of interactions due to a decline in available attention during such interactions. To explore if the underlying mechanism resulting in a decline in reported quality and closeness is the presence of the phone itself, this study involves participants using their own phones and interviews are conducted to better understand their experience in and outside of the laboratory.

Misra and colleagues (2014) attempted to explore how the presence of *personal phones* might influence the findings of Przybyski and Weinstein's (2013) study by replicating the study design in a naturalistic setting. However, interviews were not conducted with participants and the study design was neither controlled or randomized. Researchers approached dyads as they entered a coffee shop and asked if they would be willing to participate in a study, "about the nature of social interactions in coffee shops." Experimenters instructed dyads, as in Przybyski and Weinstein's (2013) second study, to

discuss either (1) the most meaningful events of the past year, or (2) plastic holiday trees.

During their conversations, participants were observed for unprompted smartphone behavior and separated into groups where one or both partners in a dyad held their phone or kept their phone on the table. Results supported Przybyski and Weinstein's (2013) findings that the presence of a mobile device correlates to lower perceived interaction quality. Furthermore, regardless of conversation topic, the presence of a mobile device continued to have a negative effect on relational quality. Results also highlighted that low and high levels of perceived closeness to one's conversation partner had the same negative effect of mobile device presence. Thus, in a naturalistic setting, closeness and conversation topic could not compete with the negative influence of a mobile device during an interpersonal interaction. In addition, participants in this study were not strangers indicating that baseline measurements of general relationship quality and closeness would have aided in interpretations of any effects according to self-selecting into phone versus no phone conditions.

MODIFICATIONS OF PREVIOUS WORK

Research procedures for this dissertation were designed to expand and modify on the research procedures outlined in previous works. An explanation of these expansions and modifications are outlined in detail below.

Parent-Teen Dynamics

Existing research explores the effects of mobile devices on the interpersonal dynamics of two strangers or two acquaintances of various degrees. This work expands

these demographics to include parent and teen dynamics. To explore previous reported effects with this new demographic, the conversation topic which yielded significant results in previous works was replicated. Thus, participants were asked to discuss “the most meaningful events of the past year” for ten minutes with or without the presence of a mobile device (depending on condition).

Experimental Manipulation

Five conditions were designed to better understand any potential differences in device ownership and presence. The lead researcher instructed participants to leave their belongings in a separate room (that was used for informed consent and an initial demographics survey) and to bring either one, both or no mobile devices so that they could be texted when the conversation was over. The lead researcher then led participants to a different room to have their conversation, and if relevant, asked to place the phone(s) on the table. Participants were randomly assigned to 1 of 5 conditions:

Condition 1 - No phone present (N = 20 pairs)

Condition 2 - Parent’s phone present (N = 20 pairs)

Condition 3 - Child’s phone present (N = 19 pairs)

Condition 4 - Both phones present (N = 21 pairs)

Condition 5 - A random smartphone present (pure replication of previous works) (N = 20 pairs)

Repeated Measures

After the conversation, parents and teens were separated into two different rooms to complete two sets of questionnaires. The first questionnaire (located in Appendix C) included questions pertaining to participants' experience of the interaction and current mood. This questionnaire was a pure replication of previous works. In previous works, questionnaires ended at this point in the research design. To enable an exploration of potential differences due to the manipulation vs potential differences due to general attitudes towards conversational partners, I included repeated measures in the research design through the use of a second questionnaire. I also added questions regarding general attitudes and beliefs towards mobile phones to better understand participant's reactions to phone presence in day-to-day life.

The first half of the second questionnaire (located in Appendix C) involved repeated measures of the first questionnaire assessing general mood and interpersonal relationships. The second half involved two previously validated phone use scales (Roberts & David, 2016; Roberts et al., 2014), including the previously validated four-item Cell-Phone Addiction scale (Roberts et al., 2014), and an open-ended question asking participants to describe "How [do] you feel about your phone?"

Scoring Methodology

The scoring methodology for each variable is outlined below:

Mood

Mood scores were calculated by summing all positive responses to the Emmon's nine-item seven-point Likert mood scale and summing the reverse coding of all negative

scores. The highest score for positive items was 28 (joyful, happy, pleased, having fun) and the highest reversed score for negative items was 35 (worried/anxious, depressed, frustrated, angry/hostile, unhappy). Higher overall scores are indicative of better pre- or post- moods, with scores ranging from 9 to 63.

Reported Conversation Quality

Reported conversation quality during the experiment and during the past week was calculated from a six-item version of the connectedness subscale of the Intrinsic Motivation Inventory. Overall score is calculated from the sum of all positive 7-point Likert scale statements (“I felt connected to my parent/child,” “I felt close to my parent/child” and, “I felt I could really trust my parent/child”) and one reverse coded 7-point Likert scale negative statement (“I felt distant to my parent/child”). Two statements were removed from final data analysis (outlined in Chapter 4 – Qualitative Insights and Discussion of Findings) as they were repeatedly misunderstood by participants (“I felt like I wanted a chance to interact with my parent/child more often,” “I felt like my parent/child and I could become closer if we interacted more often”). The highest score possible was 28 with scores ranging from 4 to 28. Higher scores are indicative of higher reported conversation quality during the conversation and/or during the past week.

Reported Closeness

Reported closeness during the conversation and during the past week was calculated from The Inclusive of Others in Self 7-point scale (Figure 2.1). Higher scores

were indicative of a closer reported relationship during the conversation and/or the past week and total scores ranged from 1 to 7.

Please circle the picture that best describes how you felt about your relationship with your child **during your conversation:**

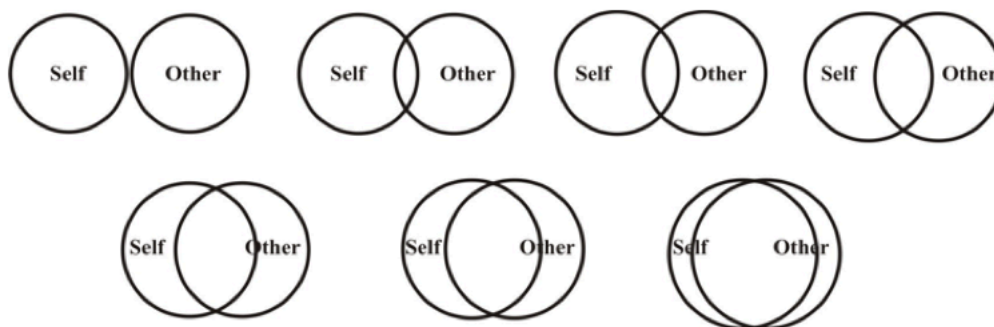


Figure 2.1: Inclusion of Others in Self Scale

Whether or not conversation partner was perceived as listening

Reported experiences of listening during the conversation was calculated by summing all questions to the previously validated six-item Team Listening Environment measure, including 7-point Likert scales for the following statements: “genuinely wanted to hear my point of view,” “showed me that they understood what I said,” “listened to what I had to say,” “understood me,” “seemed to be attentive to what I had to say” and, “paid attention to me.” Higher scores are representative of higher levels of reported experiences of listening during the conversation with a total range of scores from 6 to 42.

Phubbing

The perception of other’s smartphone usage in the presence of oneself was

calculated by summing all 7-point Likert scale Phubbing questions (“During a typical mealtime that my parent/child and I spend together my parent/child pulls out and checks his/her cell phone”, “My parent/child places his or her cell phone where he/she can see it when we are together”, “My parent/child keeps his or her cell phone in their hand when he or she is with me”, “When my parent/child’s cell phone rings or beeps, he/she pulls it out even if we are in the middle of a conversation”, “My parent/child glances at his/her cell phone when talking to me”, “During leisure time that my parent/child and I are able to spend together, my parent/child uses his/her cell phone”, “My parent/child uses his or her cell phone when we are out together,” and “If there is a lull in our conversation, my parent/child will check his or her cell phone”) and reverse coding one 7-point non-phubbing question (“My parent/child does not use his or her phone when we are talking”). Higher scores are representative of higher reported levels of parental or child phubbing with scores ranging from 7 to 70.

Smartphone dependency

Reported mobile phone dependency was calculated by summing all 7-point Likert Scale statements of dependency (I get agitated when my cell phone is not in sight, I get nervous when my cell phone’s battery is almost exhausted, I spend more time than I should on my cell phone, I find that I am spending more and more time on my cell phone). Higher scores are representative of higher individual perceptions of dependency with scores ranging from 4 to 28.

De-identification and reporting of qualitative data

Participant pseudonyms and participant number pairs were randomized to ensure anonymity and confidentiality. Pseudonyms were randomly assigned using the random name generator, Random Name Generator. Participant number pairs were randomly assigned to link parent ("P") and teen ("T") pairs together (e.g., P2/T2). Potentially identifiable information (e.g., hobbies) have also been slightly altered to maintain confidentiality throughout. Participant ages have also been randomly altered (range of -1 to +1) to maintain confidentiality and anonymity. Bolding in participant quotes was added to aid in comprehension.

Data

Results include data across 200 participants (100 parent-child dyadic pairs who live together). Participant demographics reveal participation of 33% Males and 67% Females with the average age of parents equaling 48.42 years (SD = 6.07) and the average age of teens equaling 16.04 years (SD = 2.24). Average income was \$139,318.68 (SD = 120,896.55), average number of siblings was 2.29 (SD = .93), and ethnicity was distributed accordingly: 30.5% Caucasian, 54% Asian, 15% Hispanic, and .5% African American. Because participants were required to come to the University for the study, all participants lived in the greater Orange County area, but were spread out geographically across 53 zip codes. This level of diversity was achieved through rigorous recruitment methods across Orange County, reaching out to different teen groups in the area, contacting various parenting groups, high school teachers, community college professors, and university professors. Data collection occurred over one year and eight months.

Deception during participant recruitment and during the beginning stages of the experiment (regarding the purpose of the study) made screening participants for technology use/ownership impossible. The assignment of participants to certain conditions also had to be as inconspicuous as possible, thereby preventing researchers from being able to strongly steer participants into their randomly selected groups if participants preferred otherwise (e.g., assigning a child to bring their phone during the conversation and a parent deciding that they would bring their phone instead). Due to these restrictions, 21 parent-teen pairs had to be removed before reaching the final data set for various reasons (e.g., presence of additional notification devices during the experiment such as smartwatches ($n = 4$), participants reporting that they thought the study was about phones in the questionnaire ($n = 4$), participants self-selecting to a particular condition – with some parents insisting on bringing their phone instead of their child ($n = 4$), participants lack of technology in the home ($n = 8$), language barriers ($n = 1$)). As such, 242 participants were recruited in total, but only 200 participants are to be analyzed in the remainder of this dissertation.

Research questions

The following research questions guided experimental design and data analysis:

- 1) Does the mere presence of a mobile phone during parent-teen interactions influence the reported conversation quality, reported relationship closeness, or reported listening of parents and teens? Does the type and amount of mobile phones present have an effect?

- 2) If the mere presence of a mobile phone during parent-teen interactions DOES influence the reported conversation quality, reported relationship closeness, and/or reported listening, what factors might affect these mobile phone influences?
- 3) How does the measured influence of this mere presence compare to previous works regarding the mere presence of mobile phones between two adults?

Qualitative Component

To better understand how participants experienced the experiment itself and to explore how mobile phones fit into broader family dynamics for teens and parents, 30-minute separate semi-structured interviews were included immediately following the experiment. I have coded approximately 100 hours of interview transcripts (see Appendix D, Codebook for additional details) for issues such as: references to media portrayals about smartphone dangers; generalized statements regarding the negative effects of mobile phones and where these ideas came from; expressions of guilt or vigilance around use patterns; addiction language; expectations of use; reported benefits and challenges; reported experience of distractions; reported experiences of conflict; reported intended uses and success of intended uses, etc. The qualitative findings inform the dissertation in the following way: in Chapter 4, The Effect of Mobile Phone Presence on Parent Child Interaction – insights include how parents and teens made sense of the experiment and how they answered the questionnaires. In Chapter 3, Mobile Phone Concerns – insights

include where mobile phone concerns are described to originate and how these origins were reported to influence interpretations of device usage. In Chapter 5, Mobile Phone and Parent-Teen Conflict – insights include when conflict was reported to arise for parents and teens and why.

CHAPTER 3: Mobile Phone Concerns

The design of this dissertation was motivated to assess the internal reliability and generalizability of two previous studies which have been used as evidence in the media and within the research community to perpetuate mobile phone concerns (Live Science; Misra et al., 2014; New York Daily News; Przybylski & Weinstein, 2013; Scientific American). My goal was to re-examine findings of these prior works within parent-teen relationships to provide nuanced insight into the legitimacy of these concerns for families and researchers. I was not aware at this stage how deeply this topic would resonate for both parents and teens and how much parents and teens would report feelings of either concern of the unknown effects of mobile phones or concern from the “known” research reported in the media. I was also not aware how intertwined these concerns would present themselves within parent-teen mobile phone dynamics and what a strong role these concerns would play in parent and teen interpretations and descriptions of everyday interactions.

I classify these often unbidden reports of mobile phone concerns as representations of a deeper internalization of such concerns, with internalization classified as the “Unconscious mental process where characteristics, beliefs, feelings and attitudes of other people are assimilated into your own self” (Psychology Dictionary). Where “other people” are defined as various media outlets (e.g., online articles, television programming, social media, etc.) and authority figures (e.g., school principals, medical and government bodies, police departments, etc.). In the remainder of this chapter, I examine how these concerns often present themselves as deeper internalizations of the media’s mobile phone addiction narrative and I explore how media and authority figures often promote this internalization for parents and teens.

With the media's growing mobile phone addiction narrative, it was not surprising that some participants reported reading or hearing about the presence of mobile phone addiction. However, with 87.44% of participants referencing some variation of mobile phone concerns throughout the study, the presence of such concerns and addiction language during mobile phone sense-making was striking. I examine the reported origins and effects of these concerns for individuals and family dynamics below.

Questionnaire Data

In data analysis, I began to notice that several participants were using the opened-ended space "How [do] you feel about your phone?" to defend or qualify their mobile phone usage, rather than report how they felt about their phone. For example, take a parent Diana. She admits that she enjoys her phone, but not without simultaneously defending that she is not like young people and that she is not on it too much. It comes across that she is uncomfortable admitting any enjoyment that she experiences without also asserting that she does not have a problem. Problematic behavior for Diana, includes being unable to limit oneself and not having self-control:

*I'm happy about my usage of cell phone. **I do not over use it like young people** because I don't use Facebook and social media. They're never ending and **takes up too much time. There should be a limit and self-control.*** – Diana (57), P8

Diana's child, Miley, also expresses a strong attachment to her phone in her response by using the word "love" to describe her feelings to her device not once, but two times. But, like her mother, openly expressing this love for her device is accompanied by qualifying acknowledgement that technology might be detrimental to relationships:

I love my phone. I love twitter, snapchat, texting, etc. But sometimes I wish technology wasn't such a big part of our everyday lives. I hate when some of my

*friends are constantly on their phones when we hang out. **It's like a barrier that halts us from spending quality time together.*** – Miley (17), T8

The statement that phones are “like a barrier that halts us from spending quality time together” mirrors language from mobile phone addiction articles such as “How smartphones have destroyed a generation” (Twenge, 2017). Such distancing language also acts to balance out any potential feelings of guilt or shame related to her positive association with the device – it is okay to “love” your phone as long as you showcase some negative feelings toward the device. Miley may also be responding to the interview setting. Thereby distancing herself from the device to prevent being viewed as a problematic user, while directing attention to other people who are the ones with issues.

In substance abuse research, when a person fears substance addiction their verbal behaviors include the insistence that they can stop whenever they want. Research has shown that people exhibiting addiction tendencies also have a strong desire to communicate to others that their use is not a problem (Blumberg, 2004; Fine, 2001; Kelemen, 2003). I saw numerous such distancing moves in the open-ended survey questions and in post-experimental interviews. For example, when asked how it was to leave her phone in the other room during the experimental portion of the study, the following parent states:

*Oh, [it was] fine. **It doesn't bother me.** Yeah. The only time it really bothers me is when I know that – the only thing I really care about is if something would happen to the kids and somebody would need to get ahold of me. Other than that, **I don't have a problem. I mean, sometimes I wish I didn't even have a cell phone but I kind of have to in this day and age.*** – Vicki (54), P31

While I am not attempting to delineate addictive behavior, or assess whether people display addictive tendencies, I found these unsolicited assertions compelling. Why would people feel the need to offer up generalized qualifications or defensive assertions

distancing themselves from their own reported behavior via their mobile phone?

To better explore this phenomenon, I developed a coding system to note the presence of such addiction concerns in response to the open-ended question “How [do] you feel about your phone?” Addiction concerns were coded as any language patterns (outlined in Appendix D, Codebook) that resembled the statements of: (1) Language of addiction and attachment (2) Language resembling “I can stop/be without it whenever I want,” and (3) Language resembling “I am concerned about my use and the use of others.” I then analyzed post-experimental qualitative semi-structured interviews to better understand these concerns. Coding approximately 100 hours of interview transcripts for: references to media portrayals about smartphone dangers; generalized statements regarding the negative effects of mobile phones and where these ideas came from; expressions of guilt or vigilance around use patterns; and addiction language. These data were then analyzed in conjunction with flagged responses to the open-ended survey question in a round of iterative coding, memoing, and dialoging between co-researchers.

Results

Of the 200 participants we studied, 61% of survey responses and 87.44% of combined survey and interview responses included participants volunteering that they do not “need” their phones, that their phone use is not a “problem,” or that they were concerned about their personal use. Of these responses, 47% were from parents and 53% were from teenagers. The near equal share between parents and teens to burden the responsibility of mobile phone concerns is interesting in light of reported parental pressures to monitor and to protect teens from overuse. The stereotype of teenagers

blindly being obsessed with their phones is not upheld in these findings. These data suggest that teens are concerned and/or reflective of their own use practices. In some cases, teens display concerns when their parents do not, indicating that concerns may not be shared within parent-teen dyads.

The three mobile phone language patterns of concern that arose in response to the open-ended question “How [do] you feel about your phone?” are outlined and discussed below. Within these distinctions, I expand my analysis of the presence of addiction narratives and expressions of concern, guilt, and shame in post-experimental interviews to better understand the experience of mobile phone concerns for parents and teens.

Pattern 1: Language of Addiction and Attachment

In the first language pattern, participants called upon language of addiction and/or attachment when describing their feelings about their phone. They either labeled themselves as “addicts” or voluntarily emphasized how *not* attached they are to their phones. For example, Brian asserts,

*I enjoy spending time on my phone because I am in the car a lot and it helps keep me occupied. Yet **I know that my phone is not my life.*** – Brian (13), T52

“My phone is not my life” can be read as somewhat hyperbolic. But such statements are not unique. The use of strong verbiage such as “not an obsession” (P16) or “not my only source of happiness” (T23) to describe individuals’ non-attachment to their phone is noteworthy. Such language highlights the degree to which concerns around problematic mobile phone use center around fundamental ideas of what it is to be human and to live a fulfilling life. For example, while Kathy admits to using the phone to “keep everything in check,” she is adamant that it is not an “obsession.”

*I am glad I have a phone so I can be touch with my kids and be able to access my emails and daily information I need to keep everything in check but I don't like to use it for spending time on it. I don't enjoy texting as much as having a conversation with someone. **Cell phone is a necessity but not an obsession.** – Kathy (52), P16*

Similarly, several participants demonstrated a need to assert that their phone was not a source of “happiness”:

*My phone is an amazing piece of technology that can connect me to my friends/family at any time, and I can do many great things like take pictures and play games on it. **However, it does not replace “normal” human-to-human conversation/interaction by any means, and it definitely not my only source of entertainment or happiness in my life.** – Marshall (17), T23*

These data suggest an internal struggle of reporting a positive experience and relationship with the device coupled with the need to emphasize that happiness is not tied to the device itself:

***I am happy I have a phone because of its utility** – looking up directions etc. **But it doesn't “make me happy”** And it does consume time and energy that sometimes should be spent in another way. – Allison (46), P56*

While the distancing moves and assertions that mobile phones do not control one's life were prevalent in these data, some participants actually called upon the word “addicted” across surveys and interviews (24.50%) to assert that they did not suffer from such an affliction. For instance:

*I like having my phone but **I'm not addicted to it.** It is a helpful and convenient gadget. – Renee (45), P29*

While Renee makes a definitive claim of non-addiction, another parent, Harvey, appears to be struggling to distinguish between expectations of use, his own patterns of use, and the relationship between use and stress. It is unclear from this statement if stress is caused by work related communication or a feeling that he is using it more than he should:

*I am pretty neutral on my phone. **I don't feel addicted to it.** I need it for work so sometimes it causes me stress. – Harvey (46), P48*

In these particular cases, we see how not just the narrative of addiction has been internalized, but also the language of addiction.

The adoption of such addiction language often mimics the language used by mainstream media. Throughout this language pattern, we see people struggling to find the right words to describe their experience with the device. In calling upon this inflammatory language of addiction they often seem less concerned about pathological use patterns than adopting the language fathered by the dominant narrative of smartphone addiction. For example, while trying to make sense of the considerable amount of time she spends on her phone for work, one parent, Patti, wavers and ends up saying that she must be: *"I don't know what the **right word is. Addicted?**"* (46, P22).

As participants struggle to make sense of their mobile phone use, the lens of smartphone addiction provided by the media can be adopted during this sense-making process. The following teen, Shawn turns to the "addicted" label while attempting to understand and communicate his use practices:

I do feel like I may be "addicted" to my cell phone, but at the same time, I think it's because I get bored during summer and don't have much else to do. I like the things I am able to do with my cell phone and I like using it, but I am also fine doing things without it. - Shawn (18), T3

Once Shawn has labeled himself as a phone addict, he begins to further critique what it means to be labelled an addict. As he reflects more on his use, he reports to actually enjoy what he uses his phone for and rationalizes that he does not have many other options available to turn to. These realizations can allow Shawn to distance himself from the social stigma of addiction. His final statement that he is capable of putting down the phone also

solidifies his attempt to separate himself from the harmful effects of bearing an addiction label.

The addiction narrative also resonates with the following parent Brad. However, Brad articulates that it is the relief he feels using his phone that he believes resembles the use of drugs (even though he has not used drugs):

*I never done [drugs] but **I think it's like a drug where people just get – even I get addicted to it** because it's just meaningless but yet you use it because it gives some kind of relief to your thought process, stress and all. - Brad (43), P77*

There is a negative association with turning towards an external source to receive internal relief. Any positive associations Brad has with his phone to facilitate relaxation are interpreted as a shameful and as an addictive practice. The pattern of listing values that one experiences through the device and labeling those enjoyments with addiction is also illustrated in Dorothy's interview description of her "addiction":

*[Social media and messaging] is an easy way to say here's what I'm doing today, I'm thinking about you or I saw this and it reminded me of you, and it's a quick way to connect in a way that isn't verbal. So we definitely use that to interact. I would say that [we] are mostly introverts, and definitely pictures and texts are easier than words. **All that to say yeah, I'm pretty addicted to my phone.** - Dorothy (44), P86*

Although Dorothy uses her phone to stay connected with friends and family, her considerable phone use, that is a byproduct of her motivation to stay connected, is self-labelled as an addiction.

These data suggest that the narrative of mobile phone addiction has influenced parent and teen articulations and interpretations of mobile phone use. This narrative is particularly salient when parents and teens do not know how to interpret their use, as the mobile phone addiction narrative provides a means to verbalize use patterns. In addition, parents and teens who demonstrate concern of being labeled an addict often couple

admitting positive associations with mobile phones by inserting qualifying statements against addiction. This pattern of behavior could also lead to increased feelings of inner turmoil or conflict if an individual harbors positive feelings towards their device but does not want to be considered a mobile phone addict.

Pattern 2: “I can stop/be without it whenever I want”

In the second language pattern, participants used the open-response space in the post-experimental survey to emphasize how they could “live without their phone” if they needed to. Similar to the prior language pattern, such statements often combined a positive description of the device with a statement that also undermined the positive association. What made this pattern distinctive was language that signaled an additional defensive or distancing move that suggested a fear of being labeled an addict. These participants thus began their response by stating what they enjoyed about their phone but concluded with an assertion that they were not attached to their phone and that it had had little to no influence over them. For example, it was particularly important for the following parent, Mike, to convey that the phone did not control his life:

*I appreciate what it does for me: email, weather, call family and friends, get info, tells time, shows calendar events, sets alarms (which I need) but - **I'm not attached to it - I use it. It does NOT control me.** – Mike (63), P57*

This heavy focus on how NOT controlling the phone is, could be interpreted as a warning sign for addiction if we replaced this dialog with any other object/substance. For instance, if an individual were asked how they felt about alcohol and their response was: “I appreciate that alcohol helps me to relax and that I can share it with family and friends, but –I’m not attached to it – I use it. It does NOT control me.” One would most likely question

the individual's drinking habits.

However, if we look at similar survey responses, such as Mike's daughter Sandy's response:

*I do love my phone, but **I can be without it and it's not my favorite thing ever; I enjoy it, but it doesn't make me the happiest I've ever been** (does that make sense?)* – Sandy (19), T57

We can see how such assertions may be less about clinical addiction and related more to an internal struggle about appropriate use. Like many teens, Sandy “loves” her phone. But it is important to Sandy to simultaneously communicate that it is not a problematic kind of love. The internal struggle and confusion around feelings toward the phone is highlighted by an inability to confidently situate how appreciation of the phone is experienced. This hesitancy to admit positive feelings without the qualification of non-problematic use could again be associated to the repeated narrative that any phone use can be problematic.

Another teen Aubree, begins by listing all of the things that she enjoys about her phone, but ends by showcasing how her emotions are not regulated by the device:

*The phone helps me communicate to people, listen to music, and play games. But **if I don't have it, I won't be sad about it.*** - Aubree (18), T89

For these participants, it is difficult to parse if they are in a state of denial regarding their phone use, if they are embarrassed by their positive feelings towards their device (concern for being labeled as overly attached), or if they are being internally vigilant to avoid addiction patterns.

Other participants began by placing less emphasis on the benefits and enjoyments of their device. Such respondents, like the following teen Levi, still similarly conclude with an assertion of non-attachment:

*I usually always have my phone with me outside of the house, but **it is something I can live without if I need to.*** – Levi (13), T50

Levi seems to suggest that even the notion of having one's phone always with them might be read as problematic; something that could reflect negatively on him as a person. It is important for Levi to communicate that although he does carry the device regularly, he is not attached to it and does not *need* it. Again, it is difficult to interpret who Levi is trying to convince. It is possible that he is struggling with the internal conflict of knowing that he does bring it everywhere, but not knowing if this behavior is healthy or not. Without a clear metric of self-assessment, he is both describing an attachment to the tool and claiming that he can live without the device. The need to provide the reader (or himself) this reassurance can be seen as a gesture to a broader narrative of problematic mobile phone use and addiction.

Assertions of emotional stability echo the need to present oneself as not overly reliant on the smartphone. For example, similar to Sandy's quote reported previously, another participant, Lili, explicitly asserts that not having the device would not affect her mental state:

*I thoroughly enjoy using my phone as a tool and as a source of entertainment but **I would be content if I lost/have it taken away from me*** – Lili (16), T98

Again, we see participants' resistant to reporting an unproblematic or unqualified appreciation of phones. Reports of enjoying the device are often coupled with a concern that one will be perceived as someone who cannot live without his/her device. The guilt and shame associated with using addiction language to frame interpretations of one's use could be attributed to the societal stigma associated with experiences of addiction. If addiction is consistently presented as a shameful disorder leading to a lifetime label of

being an addict, it is reasonable to have a desire to assert oneself apart from garnering such harmful addiction labels.

The sentiment that being attached or addicted to one's device is undesirable is prevalent throughout these data. In a common move, Sherry compares herself to others who she believes really have a problem:

*I enjoy having my phone for safety purposes and to ensure my [children] and husband can reach me at any time. I don't use it to have long conversations on it. **I don't feel like I have to have it with me at all times. I, in fact, get annoyed with friends who are constantly "tied" to it!*** - Sherry (54), P4

In this way, the participant can justify her own relationship to the device. Where others might have issues distancing themselves from their devices, being tied to her phone is acceptable due to her underlying motivation of maintaining safety within the family. This rationalization is reminiscent of attribution bias, where individuals interpret their own behaviors more positively than others (Weiner, 1974).

With the continual pressure to be less attached to the phone, these data suggest that such comparative moves can serve to reduce feelings of guilt and concern regarding personal use patterns by pinpointing others that are more "tied" than oneself. Attribution bias also increases the problematic nature of these interpretations as it lends individuals to be more accepting of their use practices and less accepting of others. For parents and teens this could lead to parents or teens spending a considerable amount of time on the phone and viewing their behavior as acceptable, but viewing a family member's similar use patterns as unacceptable.

Other participants echo the distancing moves above but go one step further by providing detailed rationales for *why* they would be okay without their phone. A teen, Tobias, notes:

*I enjoy having my phone with me just in case anything happens to me but also so I can talk with my friends, **not having a phone wouldn't bother me as much because I have lived a long time without one, I don't feel the need to constantly use it.** – Tobias (15), T49*

Another parent, Christina, even goes so far as to provide “proof” of her non-attachment/addiction:

*Personally, I am neutral to my phone. I only use it for work, ensuring that kids arrive and reach their destinations and looking up places/addresses. **I'm okay with/without its more a functional tool rather than a networking device for me. Proof** we have [# removed to maintain anonymity] gigabit of data that we share as a family each month mine is usually < [#] of use. – Christina (45), P58*

The need to “prove” that one is “neutral” on the phone reflects a desire to distance oneself from the negative ramifications associated with emotional attachment to mobile phones that we see throughout these data. It is reassuring to Christina that she uses the smallest amount of data in the family. However, she does not comment on the distribution of data across family members, nor does she reflect on what more data could be used for. Less is viewed as simply better, just by being less.

The desire to communicate that one can stop using their device at any time or be without their device if needed reflects pressures from the media to detach from mobile phones (PCMag, 2018; TIME, 2018). If everyone is reported to be at risk for mobile phone attachment, one strategy against this attachment is to remain vigilant about one’s ability to detach on command. Another explanation for this language pattern, also related to the media’s addiction narrative, is the shame associated with reporting any positive feelings towards one’s device. Asserting that one can stop using the phone at any time could be used to illustrate control over any positive feelings related to the device. Alternatively, these responses could be reflective of denial patterns present in substance abuse research. However, without additional measurements, it is impossible in this study to delineate the

main driving factor that is motivating these participants to affirm their control over their mobile phone use and non-use.

Pattern 3: “I am Concerned About My Use and the Use of Others”

In the third language pattern, participants focused on expressing concern and/or guilt around smartphones. These language patterns were reflective of participants’ general anxieties about personal use and the use of their family and friends but did not include extreme language or clear distancing moves.

Expression of concerns

Many participants were concerned about the negative impacts of phone use on themselves and others. Examples of concerns include issues related to health, relationships, productivity, and overdependence on mobile phones. Further, such concerns did not appear to emerge from lived experience, but rather were associated with shared stories of mobile phone addiction. This suggests that lived experience does not align with narratives about the addictive and harmful effects of mobile phones. For example, take teen Natalia, who enjoys using her phone for the benefits that it provides but who simultaneously worries that her positive experience of the device might be 1) damaging her health and 2) harming her relationships with others –two prominent reported impacts of the mobile phone addiction narrative:

As much as I enjoy talking to friends and the ease of communicating, I think my phone is preventing me from doing important things, like going to sleep early or paying special attention to those around me. – Natalia (18), T5

In her interview, Natalia also described concerns about her siblings' productivity in the presence of devices. She described a general uneasy feeling in the family when her siblings are seen as laying down for extended periods of time while using their iPads. Both the considerable time spent using the iPads and the visual representation of inactivity is bothersome to Natalia. But she struggles to understand why. She acknowledges that no one in her family lets devices get in the way of completing necessary work, and her siblings are active in extracurriculars:

*It's more about the two younger [siblings]...they use their iPads a lot when they're home. They just play games and watch videos, and **we're trying to get them to use those less and do other things more.** Because **we're worried that they're laying around too much.** Because they're on summer break. We don't want them to be doing that all day. It's less about the phones. Unless we're – **I don't think anyone in my family lets their phone get in the way of their work and chores and what they have to do. [My siblings] don't necessarily have work to do, but we still don't want them to just be laying...**Because they are literally just laying down. So **we want them to be, I don't know, up and being active. But they both do** – one does [swimming] and one does [karate]. So they're not, like, not getting exercise. That's fine.
– Natalia (18), T5*

She ends asserting that her siblings' use is "fine" but the concern for her siblings' general wellbeing remains – regardless of any tangible indicators that their use might be problematic. This concern thus reflects concerns reported in the mobile phone addiction narrative that all considerable device usage should be viewed as a behavior to remain vigilant against.

When asked about her own use, she feels that she has the ability to put her phone away in class or during meaningful conversations with family members, but she still feels pressure to use her phone "more effectively" and to spend less personal time on the device:

*There are a lot of useless things on my phone. Like things that kill a lot of my time that I don't necessarily want to kill? Maybe if I do have downtime I'll like them, but then **I get caught up on them when I want to be applying my time differently. I would like to use it more effectively,** depending on the situation I'm in. – Natalia (18), T5*

She goes on to discuss how she can waste time playing games on her phone, but finally comes to the rationalization that if “*I have time to kill, **then like why not?** But if I don’t have time to kill, then, you know.*” She is able to calm the internal struggle that she feels playing games on her phone (a time wasting activity) by parsing that under some circumstances, it should not be seen as a problem. For this teen, mobile phone concerns extend to her health, her siblings’ health and productivity, and her own productivity. However, she reports little understanding of what desired levels of mobile phone use would entail. Concerns instill unease of current use, but leave minimal understanding or support of what appropriate use would look like for her or her siblings. This feeling of unease is difficult to act upon without a coinciding guideline or role model of what is “appropriate.”

Natalia’s mother Tracy, brought up different concerns in her separate interview. Tracy worries that she is becoming too dependent on the phone. The idea that she no longer depends on her own memory, but on an external device is particularly worrisome to her:

*Generally, **I think I’m turning dependent on it.** Like phone numbers I used to memorize phone numbers, and when I need an address, I just go and then especially now that there’s internet. Like I used to write down the address of where I need to go. Now I’m just going to open my email and check the numbers or the address of where I need to go. **I don’t know, it’s just like I go to bed, I look at it, I wake up, I look at it.***
– Tracy (40), P5

The concern of relying on the device is exacerbated by her realization of the device’s presence throughout her day. The commanding ever-presence of her phone is expressed as unsettling in her interview. Tracy describes her habits of looking at the phone regularly throughout the day as indicative of the phone having control of her life. The interweaving of the device in her daily routine evolved without her conscious awareness. In describing

how this happened, Tracy reflects on what has become an unintentional allocation of power to the device and expresses concerns at this relationship.

The utility of the phone as an increasingly multifunctional device is also something that she worries about in regards to her children:

I think having the internet on the phone is what makes it more difficult for kids to put it away. Because they can browse, they can go shopping, they can watch YouTube or videos on the phone. Where it used to be you could check your email, I mean you texts and your calls and that's it, right? – Tracy (40), P5

The phone is not only seen as assuming control over facets of life that were once actively maintained by Tracy, but the phone is also seen to assume control over individual's attention. Due to the ability to engage with multiple activities through the phone, the mobile phone is believed to capture increasing levels of attention that were previously allocated to each separate activity that the phone now provides. Tracy's concern about the relationship between phone use and inactivity mirrors the concern expressed by her daughter; indicating that this might be an issue that is discussed within the home.

The example of Tracy and Natalia highlights that while mobile phone concerns often present themselves during individual interpretations of use that concerns are also pervasive during interpretations of *all* family members' mobile phone use. As a consequence, the media's addiction narrative can influence parental attitudes and feelings towards children's mobile phone use and can direct parental decision making around family mobile phones. However, internalizations of the addiction narrative can result in conflict for parents and teens when these concerns are not shared equally within the family. The process of this conflict is outlined further in Chapter 5.

Feelings of guilt

Similar to Natalia and Tracy, we also see a shared ambivalence towards mobile phones in the following parent-teen pair. In their open-ended responses to the questionnaire regarding how they felt about their phones, both parent and teen justify their mobile phone feelings in terms of mobile phone guilt. Teenager Ellie, explicitly references the guilt that she feels with her phone while reporting the benefits that she experiences from her device:

*b/c it is my source of connection to my friends that I am always hanging out with. I feel secure knowing I have a way to check in on people/family...**there are times that I feel guilty that I rely so much on it.*** - Ellie (16), T60

Ellie qualifies her feelings of guilt by attributing those feelings to the reliance she feels on her device. The mobile phone dependency that Ellie reports is perceived as shameful for Ellie, rather than as a frightening experience previously described by Tracy.

Ellie's mother, Tina, does not explicitly state that she feels "guilty." She does not report any unhappy feelings associated with her device usage, and actually uses the word happy to describe what the phone enables her to do. However, she reports feeling pressure to "unplug." The presence of quotes around unplug further indicates that this pressure and even verbiage comes from outside of herself:

*I like knowing that I am connected to my family and friends. I also am happy knowing that I am "on to" of work items... **I do need to "unplug" more often.*** - Tina (49), P60

However, if she were to "unplug," Tina risks displacing any guilt associated with the pressure to unplug to other areas of her life. If she chooses to go without the phone, she jeopardizes her ability to stay "on to" work items and reduces her ability to stay connected to her family and friends. Without clear direction of *how* to unplug while maintaining work and social demands Tina is in a bind. The guilt experienced by the phone can influence feelings of inadequacy and personal failure rather than promoting positive use.

The potential effects of internalizing the media's addiction narrative include experiencing such feelings of guilt, pressures, or shame associated with mobile phone use. The ubiquitous nature of mobile phones could thus result in harms to individuals' sense of self, self-esteem, and overall well-being if individuals internalize that mobile phone use is something to be vigilant against. Without role models to depict which mobile phone practices could be seen as something to be *proud of* rather than to be ashamed of, parents and teens are left with the lens of mobile phone addiction to assign guilt to *any* mobile phone use.

Differences and Similarities in Reported Concerns Among Parent-teen Pairs

While some parent and teen pairs aligned in their sentiments about smartphones, not all pairs shared the same views. For example, parents who expressed concern as a prominent feature of their questionnaire responses may or may not be associated with similar sentiments reported by their teens. This is in line with family dynamics research that indicates that when parents feel strongly about an issue, teens can either assume and take on parental values or rebel against them (Arnett, 2014).

Lack of alignment in parent/teen assessments

The lack of alignment in parent-teen assessments can result in opposing values of smartphone beliefs and/or exaggerated reported feelings of guilt, sadness, or indifference to addiction labeling. While these teens might accept a label of addiction in line with parental internalizations, the discord between parental beliefs and teens' reported value associated with their device can result in indifference or sadness associated with addiction.

For example, a mother Suzanne, appears to have internalized narratives that smartphones are detrimental to society, relationships, and mental abilities:

I feel annoyed that it has replaced the priority of real-time in person interaction and think its use is shortening attention span, conversational depth, and focus. I see its value in [business] and will have to (reluctantly) adapt my attitude and use it frequently. – Suzanne (61), P18

Her focus on the phone's downfalls and disdain for its presence is central in her survey response and suggests that she has fully internalized the guilt and shame that would accompany smartphone use. It is likely that she is also sharing these feelings with her family. Not surprisingly then, Suzanne's daughter, Penelope, qualifies her positive feeling about her phone with cautionary language about how being on the phone might cause her to miss out on relationships and things:

One: I like that my phone enables me to be connected to my friends and the world. Two: I am sad that I miss out on time with my family or things happening around me when I'm on my phone. – Penelope (18), T18

However, Penelope's relationship with the device is more complicated. In her interview, Penelope references the language of addiction three times while describing her feelings about her phone. but such references are not clear-cut assertions of a problematic relationship with the device:

I would definitely say I have an addiction to it. I use it constantly, it's like my best friend. Sometimes I would rather be just with my phone than with other people. I don't know what else. It's just constant. It's demonstrating, right? We're so connected. Look, I'll show you. I would say it's an addiction, because I don't see all my friends all the time, so it's easier to connect with them all the time, and then I feel like I'm constantly talking to my friends. That's why I guess it's easier to be alone with it, because then you don't have to make the effort to go out and meet the person. Do a thing, get dressed and go outside. You can just be in a t-shirt still talking to them at home. That's nice. But it's definitely an addiction, I use it for everything. – Penelope (18), T18

Even though she repeats the word "addiction" throughout her interview, Penelope's affect during the interview tells a different story. What doesn't come through in a transcribed

quote is Penelope's dismissive and defensive attitude about the addiction narrative. She appeared to use the term addiction as a challenge to those around her, rather than deep concern about her own well-being. Using the phone and talking to her friends is labeled (by society and perhaps her mother) as problematic. Yet, Penelope feels that such engagement with her friends is important to her life as a teenager. Thus, she has no choice but to accept, and even embrace, the addict label. She has, in essence, appropriated the term to describe what she conceives of as a normal relationship to the device. As part of the lack of alignment between mother and child, Penelope expresses disdain and frustration with her mother's relationship with the device:

Oh my god. They [mother and her phone] have an awkward relationship. She leaves the thing everywhere...She also doesn't know how to work it either. I don't know if it's that she doesn't want to know? Maybe she just doesn't really care. She knows very few functions...She's not 80, I mean honestly, it's ridiculous. – Penelope (18), T18

Penelope's view that her mother lacks experience with smartphones makes it easy for her to dismiss her mother's judgments around phone use. In trying to assess her own relationship with her phone, Penelope is stuck between a social narrative of addiction, her mother's uninformed negative assessment of phones, and her own desire to use the device.

In addition, the presence of parental concerns combined with a lack of phone experience could deepen a strain on the relationship if children lose respect for their parents "ridiculous" decision making. As a consequence, parent-teen disagreements of mobile phone use under these circumstances could intensify the belief that mobile phone presence is the cause of relationship strife. However, these experiences of mobile phone conflict could be more emblematic of broader parent-teen differences in mobile phone knowledge and diverging mobile phone value judgements (more on mobile phone parent-teen conflict in Chapter 5).

Alignment in parent-teen mobile phone assessment

Other teens exposed to parental mobile phone concerns incorporated these concerns into their own descriptions of personal mobile phone use and took parental concerns very seriously. These data suggest that the more a child sees his/her parent as knowledgeable and experienced, the more likely they are to assign value to parental beliefs about mobile phones. For example, when the following teen, Sara, was asked in the questionnaire how she felt about her phone, she listed three concerns of mobile phone use without expressing any positives:

*It has replaced reading a book a lot of the time, and **I think reading would make me happier**. Also, the media I view is mostly on my phone, so **when I see things on social media and compare them to myself I feel bad, and I don't think I would feel the same way if I was doing something better with my time**. – Sara (14), T2*

When we look to the parent Rachel as a potential role model for phone usage beliefs, we see similar concerns displayed when asked the same question. Rachel does report some enjoyment from her phone, but focuses on the negative impact she sees phones as having on society. Although Rachel's description of her feelings is more nuanced than her daughters', the main message conveyed is that phones come "at a cost (a big cost)":

*I **love** the GPS, access to email and phone. I appreciate access to text and game apps for boredom (and social media). I **resent the sense of obligation social media places in terms of keeping up. I am sad when my spouse or friends check in with their phones more than our activity**. I do enjoy the pictures and camera access. The calendar is lifesaving. **The phone is necessary, but comes at a cost (a big cost)**. I have some social consequences for not participating as much (I often leave it in the car or on the charger and mainly [long-distance friends]. It is a social value (very much like alcohol) where participation increases popularity, but can lead to dysfunction. I **see issues with many friends, family and peers in their use** (tuning out like walkman headphones, sexting, and general preoccupation). – Rachel (47), P2*

In contrast to Suzanne (the parent who does not use her phone much), Rachel is adept with mobile phones. She plays games, uses various social media, tracks her calendar app religiously. Rachel's opinions regarding mobile phones could therefore be viewed as more legitimate by her daughter than if she had little exposure with mobile phones. Her mother's opinions are backed by news stories and the two are able to discuss the role of phones in their lives. As Sara recounts in her interview:

*[I read an] article somebody wrote about **what life would be like without having iPhones and everything, and how dramatically the use of phones have been upgraded.** I was pretty surprised, **I didn't know it went up that much. I was like oh wow, us teens these days. Dang...I agreed with it because I know it's been a real bad habit of all of us** who have been on our phones instead of actually going out there...**So I showed her about it and I was like, this is crazy!** And she's like, **yeah, you contribute to that percentage.** And I looked at her and **I was like okay, I think I should stop using your phone that much** and **she was like, yeah, I think so. Okay. I think I'll make that work.** – Sara (14), T2*

Although the daughter is surprised about the findings of the article, as she didn't personally experience the large shift that the article reports, she decides to agree with the findings because "I know it's been a real bad habit of all of us." When she brought the information to her mother Rachel, she remembers her mother using the article as additional support that Sara should use the phone less. A decision that she ends by agreeing in theory to do.

The sadness accompanying the daughter's interpretations of her own use is palpable, even though she does not report any negative repercussions with her device. This emotional valence suggests the importance of parental and media interpretations of phone use. Sara uses her phone to keep in contact with friends, keep updated on the world around her – school, extracurriculars, etc., keep in contact with her family, learning things on YouTube, and very rarely plays games when she does not have anything else to do. Yet, concerns about her potential phone use color every activity.

It is important for parents to reflect on how their parental values and judgments can have an impact on their children's personal interpretations of mobile phone use. While parents might desire that their children be concerned about mobile phone use, parents might also consider under what circumstances and for what activities they would like their children to be worried about mobile phones. Without reflecting on and communicating the differences between problematic mobile phone use and appropriate mobile phone use, children can become burdened by viewing all mobile phone use as something to be fearful and vigilant against. By removing the phone as a concern in itself, the issues and motivation of underlying phone use can be more clearly examined and the additional stress, guilt, and shame associated with simply using a device could be mitigated. This reflection could also reduce feelings of stress, guilt, and shame for parents.

Remaining survey responses that did not display three language patterns

Of those who did not report their feelings about their mobile phones in the language of addiction concerns, responses ranged from participants wholeheartedly embracing a positive association with their device to those who expressed a negative association with the tool but did not do so in the defensive manner typical of addiction and concern language. 28 percent of survey responses were used to report unqualified appreciation of the device. For example, the following teen, Xander, lists several ways for which the phone helps him throughout his day:

*It helps me organize my day, relax with music, and contact my friends. It does a lot for me, so **I value it pretty highly.*** – Xander (18), T41

The appreciation of what phones are capable of was a common explanation used to describe positive feelings towards one's device:

*Nowadays the cell phone is like the library, a news stand, a navigation, a dictionary...
The cell phone can be used in many forms in our daily life. **I love it!** – Cal (50), P65*

Outlining the practical uses (e.g., library, news, navigation, dictionary) and supportive uses (e.g., organization, relaxation, maintenance of friendships) of phones were the most common accounts of positive associations to the device. Another participant reported that her phone is capable of making her 100% happy and sees the phone as just an extension of who she is:

*My phone is basically me. I keep my secrets, my interests & my memories in my phone. My phone is something I use when I'm happy, sad, angry, etc...**my phone is something that can make me happy 100%** - Elsa (16), T15*

Viewing the phone as a tool to fulfill various needs was associated with positive interpretations of one's device usage, as phone use can be seen as justified and necessary.

Furthermore, while teens tended to focus on adolescent needs, such as maintaining friendships, keeping in contact with family, and doing homework, parents tended to focus on parental needs such as keeping up with work demands, familial safety, and maintaining contact between family members:

*When my phone is in front of me, I am happy because sometimes my children are not at home, I cannot talk with them. **That's the time when the phone is important. Phone is very important for everybody in this globalization.** – Penny (55), P25*

In contrast, six percent of survey respondents described more ambivalent and negative feelings about the device. For parents, these negative feelings were often tied to feelings of constant connectivity:

***I like being able to easily be in touch with my family, especially my kids. By being able to check my work messages/email on my phone I can spend more time away from work and still be productive. The downside is the urge to continuously check for emails.** - Josephine (46), P87*

Feeling constantly connected was also an issue for teens. With the following teen describing the lack of independence he feels through being constantly connected to his parents:

*In my opinion, an iPhone is **more of a burden than a tool**. It's great when I need to get in touch or look something up, but I don't like having to tell people about my constant whereabouts. **I think I would feel more independent without a phone**. The idea of not having to tell my mom or dad that I'm going out or where I am going sounds pretty cool to me..."* Frankie (19), T87

An even smaller percentage of participants (5% of survey responses) used the open-ended survey space to focus on functional problems with the device itself. Such as:

*My phone **has a problem with the screen** so I have to turn it off and on many times before I can use it. I can't play games" – Ruben (12), T63*

Summary of remaining survey responses

The lack of addiction language or related mobile phone concerns in thirty-nine percent of survey responses indicates that internalization of the addiction narrative can be combatted against. When individuals report either high value from their device or repeated frustrations with their device these feelings can supersede focusing on addiction concerns in survey responses. However, after adding survey responses to interview data, the presence of mobile phone concerns increases to the vast majority (87.44%) of participants. These data suggest that the reach and influence of mobile phone addiction narratives should not be underestimated when interpreting individuals' mobile phone sensemaking and feelings associated with mobile phone use.

Origins of the Addiction Aversion

Post experiment semi-structured interviews were used to gain insight into sources of these internalizations and internal conflicts. As noted in the previous section, in addition to statements offered in the open ended survey, a substantial number of participants (87.44%) also volunteered in interviews that mobile phones were “bad” or dangerous. When pushed to describe these dangers, people had some specific concerns (e.g., texting while driving is unsafe, blue light negatively affects sleep patterns, etc.). However, such specific concerns were generally overshadowed by a vague sense of unease about the devices. Mobile phones were reportedly problematic for “presence,” harmful to relationships, and “well, just bad.” When asked to elaborate on details about these dangers, participants were generally stymied, repeating broad statements while having minimal ability to qualify what they meant by “presence,” what happens to “relationships” when mobile phones are carried by people in them, or what “bad” looks like in practice.

Participants regularly lamented that everyone is on the phone “too much” and/or repeated potential negative outcomes of phone use. However, participants had difficulties describing how these ideas related to their own experience:

*I just feel like everybody's on their phone **too much**. I don't know. **Cyber bullying**, people – **I don't know**... I feel like people now – cyber bullying is easier to do and – I don't know. **I'm spending too much time**. – Stacey (19), T96*

Many teenagers reported attending school-sponsored assemblies and/or completing homework assignments about the dangers of technology that included such mobile phone fear based messages. Parents also described mobile phone workshops and parenting classes sponsored by the police department regarding how to navigate mobile phone use within the home. Both parents and teens made references to the message of “addiction”

and problematic phone use proclaimed by mainstream media. Participants recounted hearing these messages and appeared to struggle with how to make sense of them.

A recurring theme across participants was a direct appeal to the media when attempting to explain the danger of such devices. Exposure to articles perpetuating concerns about mobile phone use was not easily forgotten. The following parent, Sean, recalls an article that is three or four years old when referencing how he believes that the light of the phone affects mental capacity and potential for addiction:

*Probably the most interesting article I've read though was – **I want to say the article's maybe three or four years old. It wasn't just about cell phones, but it was just about electronic devices in general and...how it affects our brains. The lights and everything else affects our brain patterns and how it can become addicting and how really too much usage is not good for us.** – Sean (46), P11*

Another parent Vicki, also recalls reading mobile phone related articles that stood out to her. In particular, she references several articles that she has read about the downfall of millennial's social and interpersonal skills:

*A couple articles about cell phone and technology in general and how – how it's interesting how (millennials they call them), when they're going for job interviews and things **they don't know how to have a conversation or they have problems with interviews.** So now they have classes to teach people how to interview and how to talk to people **because they're just so used to just texting and using their phones.** They're not used to making eye contact and things like that so it's interesting...**I could totally see it coming. Yeah, I mean, yeah, we're going to lose the art of conversation and that's just the world that changes.** – Vicki (54), P31*

These articles, logical in nature, appeal to Vicki's desire to make sense of the world. It is logical that people who spend a lot of time looking down at their devices might lose time spent looking into people's eyes and therefore also lose the ability to look up and into other people's eyes. Although she has not personally experienced this phenomenon with millennials today, she can "totally see it coming."

The idea of taking a phone “sabbatical” was also brought up in several interviews.

Bill cited a news article as support for taking a leave of absence from one’s device:

*I read an article...about – this is probably a year or more ago, about **people taking phone sabbaticals**. So they – I say, “Guys, we should do that. We should pick a day of the week...and you just leave [the phone alone] all day.” Because there’s this sense of oh, it’s very convenient to have. **Somehow being attached to something that you feel like you have to have it with you is troubling to me. And we all agreed, “That would be really good”**. – Bill (51), P96*

While Bill found the idea of mobile phone attachment described in this article troublesome, he reported that the family has not instituted the phone sabbatical. In this admission, Bill hints at the difficulty of instituting such practices, even with the credible support of news sources and the internal family desire to do so.

Teens were also aware of articles referencing the decline in social skills being attributed to increased use of the phone and had to make sense of these messages in regards to their own patterns of use. Connie combats this narrative:

*[The article] was **talking about how teens are addicted to their cell phones, and learning their social skills**. I’ve seen a couple articles about that... [But I don’t feel it’s affected my social skills] I read it just like to have a perspective, how it shouldn’t affect me. **We see in the article that it’s influencing somebody’s life, and I don’t feel like it would get to me**. – Connie (17), T24*

Unlike numerous participants who expressed blanket concerns, Connie hones in on the fact that for phone use to be problematic it must negatively influence someone’s life. Thus because she has not experienced the negative effects reported in the media and does not foresee herself letting the phone interfere with her ability to socialize in the future she removes herself from the pressure to be concerned about her own patterns of use.

The insistence that phones are harmful can be disheartening in a world where mobile phones have been a central part of your upbringing. If teens accept that phones are truly as negative as articles proclaim, they are in essence accepting that they have been

inadvertently stunting their own growth. Instead, the following teen, Katherine, pushes back on this narrative and explores how phones could be interpreted to help people communicate better:

I think [news articles are] a little biased. They're done in such a negative manner, like oh, you'll never communicate with each other if you're always on your phone. I think it helps some people communicate better, because they might be more awkward in person, kind of like me. So I find it easier to talk to my friends though the computer or on my phone I guess. – Katherine (16), T6

Katherine's desire to explore the possible positive ramifications of phone use is striking. Her attempts to make sense of her life experience in terms of the current narratives highlight the importance of developing a more nuanced narrative around the motivations, experiences, and ramifications of smartphone use.

Teens were also aware of the potential health harms of mobile phone use as described in mainstream media:

Well I remember reading that sleeping next to your phone would give you cancer. Which I don't know if it's true. I remember reading that very young. That made me stop sleeping near my phone, and stop using it. And then I've read studies about not having it – I think I read it in my freshman writing class, actually. Something about not reading your phone late at night. – Kristi (18), T12

Reading reports that mobile phones might give you cancer can be extremely fear inducing to a child. The fear that the phone might kill her was so deep that Kristi stopped using the phone and avoided being in close proximity to the device. Illustrating the long-lasting repercussions that can result from media influence. In addition, such narratives also often undermine the positive experiences that parents and teens report.

The salient recall of information learned in media articles and/or from authority figures illustrates the origins and support for mobile phone concerns. Parents and teens describe long lasting effects of being exposed to this information and reported concerns.

Participants are able to recall articles they read years prior. Such articles were also reported to have a lasting impact on individuals' sensemaking of mobile phones. Thus further providing support for the re-examination of mobile phone addiction metrics to reduce the harm of perpetuating a narrative of addiction without a clear understanding of how mobile addiction manifests and how to develop treatment models based on this manifestation.

Undermining of positive experience of phones

An example of how media often undermines the positive experience of phones is found in a parent Chelsea who first states that she and her children love their phones. Throughout the interview she proudly recounts how they communicate regularly via text and joyfully describes the personalized emoticons she has created for her two children. However, when asked if there are times she chooses not to use her smartphone, her responses became more complicated.

*We have made attempts to not have it out. When we go out to dinner, or occasions like that. But **they're rare when we agree to do it...** I mean there's not much resistance, we just see whether we can do it. – Chelsea (43), P93*

When Chelsea is pushed to describe why she feels like they *should* stop using their phones during meal times – even though she reportedly does not see a real issue with this behavior (and further did not report that it undermines either the quality of the conversation or their relationship more broadly) – she has difficulty parsing underlying reasons:

*It's just like...what people are talking about. What's in the news **and they feel like people are not interacting socially. But I don't know, not in my case, I don't think so.** – Chelsea (43), P93*

While participants might parrot several distinct negative mobile phone messages present in the media, the concerns in practice were often removed from descriptions of mobile phones day-to-day use.

Summary

Mobile phones are often necessary for work and social demands (Mazmanian & Erickson, 2014). The question then becomes what are the effects of mobile phone addiction messages on users? What position do such narratives put people in as they attempt to make sense of their personal use practices? These data suggest a sweeping sense of struggle, concern, guilt, and vigilance with little resources or understanding of what is appropriate use. Both the unsolicited survey responses and interviews highlight the internal conflict for users which is fueled by language provided by mainstream media. As media continues to push this narrative into the new year, with titles such as “Here are some ways to curb your smartphone addiction this year” it is not surprising that this is the language she turns to (CNBC, 2018). With articles perpetuating concerns of the ever vague “too much use” with phrases such as, “studies have shown that spending too much time on your phone is bad for your focus and mental health” people are inundated with the lens of mobile phone addiction while attempting to make sense of their use (CNBC, 2018)

We should abandon such harmful addiction language in favor of a more empathic understanding and reflection on considerable mobile phone use. Spending a considerable amount of time doing anything should be cause for reflection. If a child spends time playing basketball, parents could be proud that their child has a hobby. However, if the child spends a considerable amount of time playing basketball where time spent begins to take

time away from studying or interacting with others, then there might be cause for concern. Time spent on the phone is not inherently negative, it is the influence of that time on other responsibilities combined with what activities are being conducted through the device (e.g., learning a new skill, maintaining friendships, etc.). Future researchers could harness exploratory qualitative and longitudinal work to explore the underlying motivations of considerable mobile phone use and how this considerable use shifts and changes over time. Thus, exploratory qualitative and longitudinal research can deepen our understanding of human behavior in the digital age, instead of relying on confirmatory research that supports the compelling and easy to “find” presence of mobile phone “addiction.” Further implications are discussed in Chapter 6.

CHAPTER 4: The Effect of Mobile Phone Presence on Parent-Child Interactions

The following chapter will examine quantitative results of the experimental portion of the study in conjunction with insights from the qualitative interviews. Qualitative results are used to further inform interpretations of existing quantitative findings. Scoring methodology and complete methods are outlined in Chapter 2, but as a reminder, experimental research questions were as follows:

- 1) Does the mere presence of a mobile phone during parent-teen interactions influence the reported conversation quality, reported relationship closeness, or reported conversation partner listening of parents and teens? Does the type and amount of mobile phones present have an effect?
- 2) If the mere presence of a mobile phone during parent-teen interactions DOES influence the reported conversation quality, reported relationship closeness, and/or reported conversation partner listening, what factors might affect these mobile phone influences?
- 3) How does the measured influence of this mere presence compare to previous studies regarding the mere presence of mobile phones between two adults?

Also as a reminder, 100 participant dyads (N = 200) were randomly assigned to 1 of 5 conditions:

Condition 1 - No phone present (N = 20 pairs)

Condition 2 - Parent's phone present (N = 20 pairs)

Condition 3 - Child's phone present (N = 19 pairs)

Condition 4 - Both phones present (N = 21 pairs)

Condition 5 - A random smartphone present (pure replication of previous works) (N = 20 pairs)

Key Findings

Key findings and implications, in reference to each research question, are listed below:

(1) Does the mere presence of a mobile phone during parent-teen interactions influence the reported conversation quality, reported relationship closeness, or reported conversation partner listening of parents and teens? Does the type and amount of mobile phones present have an effect?

Data analysis reveals **minimal evidence** to support an influence from the mere presence or absence of mobile phones on parents' and teens' **reported conversation quality** (*Parents* - $F(4, 87) = .80, p = .53$; *Teens* - $F(4, 89) = .55, p = .70$) or **reported conversation partner listening** (*Parents*' - $F(4, 87) = .79, p = .54$; *Teens*' - $F(4, 89) = .71, p = .59$), regardless of type or amount of mobile phones present. However, data analysis reveals **moderate evidence** to support an influence from the mere presence or absence of mobile phones on **parents' reported**

conversation closeness (*Parents'* - $F(4, 87) = 2.27, p = .07$; *Teens'* - $F(4, 90) = 1.28, p = .29$). Data suggests that **when both a parent's phone and a teen's phone is present**, mobile phone presence passes a saturation threshold and has a **negative influence parents' reported conversation closeness**. This finding is **not supported for teens**, indicating that the **type and number of mobile phones present has little effect on teens' reported conversation closeness**. Therefore, these data suggest that parents and teens are capable of having meaningful interactions in the presence of devices with minimal effect on conversation quality and feelings of conversation partner listening. However, parents may associate mobile phones with feeling less close to teens when mobile phone presence is high. This could be attributed to the distancing that naturally occurs during adolescence and parents' association of this distancing with the introduction of the mobile phone, which often also occurs during adolescence.

(2) If the mere presence of a mobile phone during parent-teen interactions DOES influence the reported conversation quality, reported relationship closeness, and/or reported conversation partner listening, what factors might affect these mobile phone influences?

Baseline measurements of general relationship quality and relationship closeness outside of the experiment were **found to account for a strong amount of variance in reported conversation quality** (*Parents' quality last week (QLW)* - $R^2 = .40$; *Teens' QLW* - $R^2 = .52$; *Parents' closeness last week (CLW)* - $R^2 = .28$; *Teens' CLW* - $R^2 = .36$), **reported relationship closeness** (*Parents' QLW* - $R^2 = .21$

; Teens QLW - $R^2 = .40$; Parents' CLW - $R^2 = .50$; Teens' CLW - $R^2 = .51$), and **reported conversation partner listening** (Parents' QLW - $R^2 = .38$; Teens QLW - $R^2 = .45$; Parents' CLW - $R^2 = .22$; Teens' CLW - $R^2 = .36$). This provides **evidence that baseline measurements are important variables to measure and include** in future studies assessing the effects of mobile phones. This also provides **evidence that general relationship quality and closeness have a stronger relationship with experiences of mobile phones in the laboratory setting than the mobile phone manipulation itself**. Lastly, this finding **questions previous mobile phone study results that do not account for baseline measurements outside of experimental manipulations.**

(3) How does the measured influence of mere presence of mobile phones during a conversation between parents and teens compare to previous studies regarding the mere presence of mobile phones between two adults?

Overall results **do not confirm findings reported in prior works** that the mere presence or absence of mobile phones has a negative effect on reported conversation quality or reported conversation closeness. Qualitative interviews suggest that **mobile phone presence is often normalized within parent-teen relationships**, supporting the reduced effect of the mere presence of mobile phones for parents and teens. In addition, **parents and teens report that they felt pressure to focus on the conversation** and not on the presence or absence of mobile phones **due to the laboratory setting of the experiment**. However, mobile

phone conflict (outlined in Chapter 5) indicates that **the mere presence or absence of mobile phones could have an effect in day-to-day family interactions.**

Data Exploration and Analysis

Data is separated by exploration of potential co-variates and analysis for each dependent variable below.

Dependent variables include:

- (1) Reported Conversation Quality
- (2) Reported Conversation Closeness
- (3) Reported Experiences of Conversation Partner Listening

Covariates to be explored from prior work include:

- (1) Age
- (2) Gender
- (3) Ethnicity
- (4) Mood before conversation

Additional covariates explored in these data include:

- 1) Reported relationship quality during past week
- 2) Reported relationship closeness during past week
- 3) Reported experiences of phubbing
- 4) Reported feelings of phone dependency

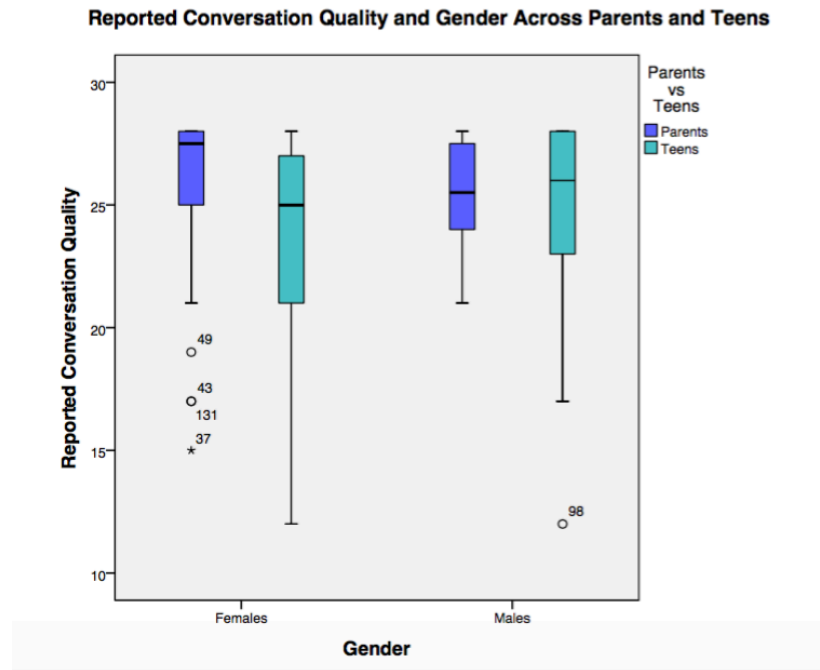
Findings

Exploration of Reported Conversation Quality

Parents' and teens' reported conversation quality in reference to all potential covariates is explored below:

Gender

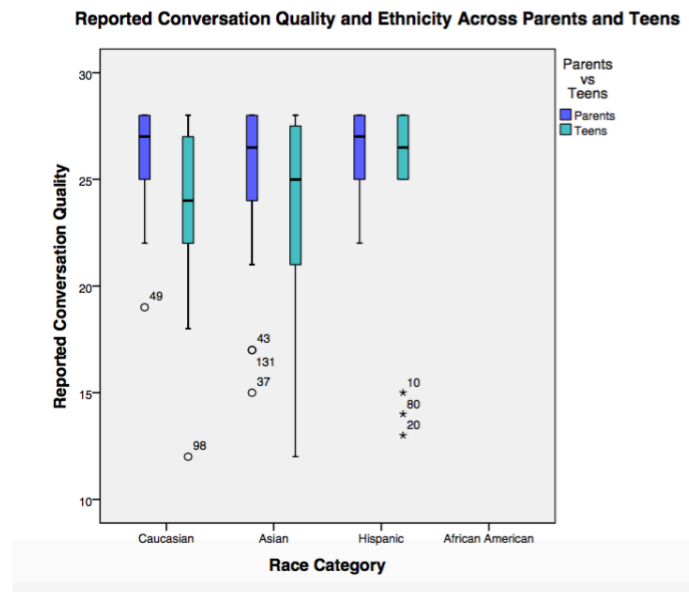
Independent-samples t-tests were conducted to compare reported conversation quality for males and females across parents and teens. No significant difference was found for males' and females' reported conversation quality for parents ($t(98) = 1.06, p = .30$) or for teens ($t(97) = -1.67, p = .10$), indicating minimal evidence that gender has an effect on reported experiences of conversational quality. However, as teens average responses are approaching significance and gender was used in previous works as a covariate, gender was added as a covariate in the final analysis model. A visualization of the differences between females and males across parents and teens is depicted in the boxplot below:



Ethnicity

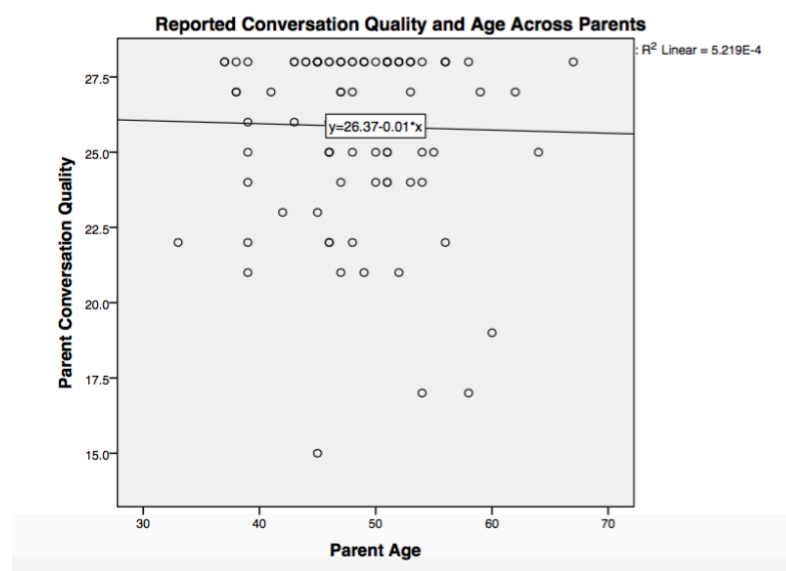
A one-way between subjects ANOVA was conducted for both parents and teens to compare the effect of ethnicity on reported conversation quality. Ethnicity was found to have little effect on reported conversation quality for parents, ($F(2, 93) = 1.04, p = .36$) with Caucasians ($M = 26.33, SD = 2.09$), Asians ($M = 25.50, SD = 3.29$), Hispanics ($M = 26.31, SD = 2.21$) reporting similar experiences of conversation quality. Ethnicity was also found to have little effect on reported conversation quality for teens, $F(3, 94) = .13, p = .94$, with Caucasians ($M = 24.00, SD = 3.87$), Asians ($M = 23.75, SD = 4.20$), Hispanics ($M = 24.44, SD = 5.29$), and African Americans (M and SD excluded to maintain confidentiality) reporting similar experiences of conversation quality. Lack of evidence for ethnicity and reported conversation quality combined with no strong hypotheses that ethnicity would have an effect on reported conversation quality for parents and teens, supports the

exclusion of ethnicity as a covariate in order to maintain degrees of freedom in the final conversation quality model.

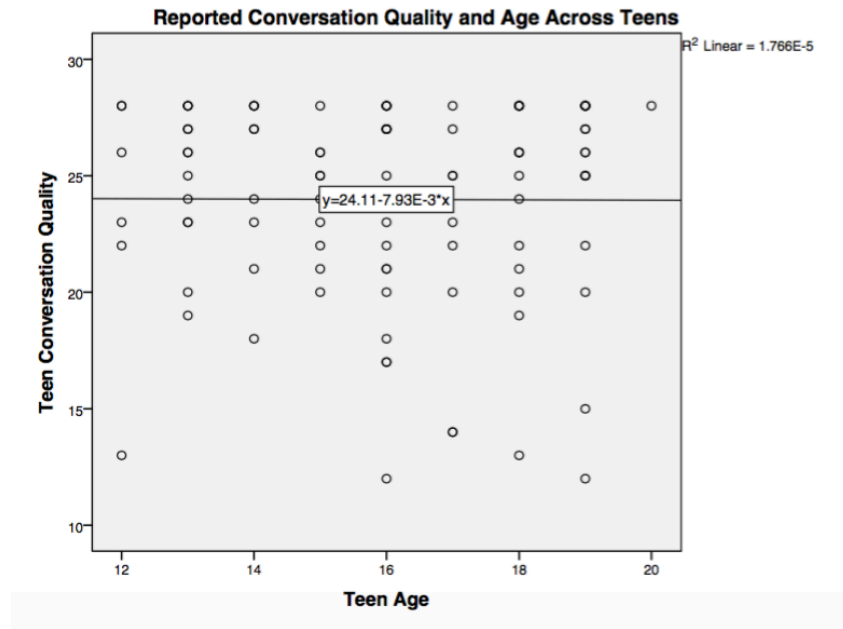


Age

Age was found to account for a minimal amount of variance in reported conversation quality for parents, $R^2 < .001$:



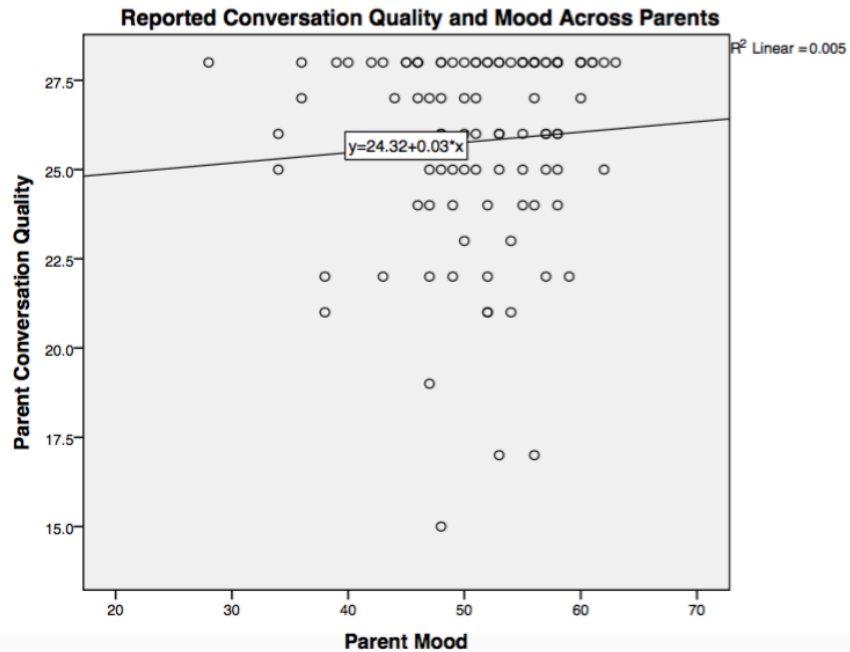
Age was also found to account for a minimal amount of variance with reported conversation quality for teens, $R^2 < .001$:



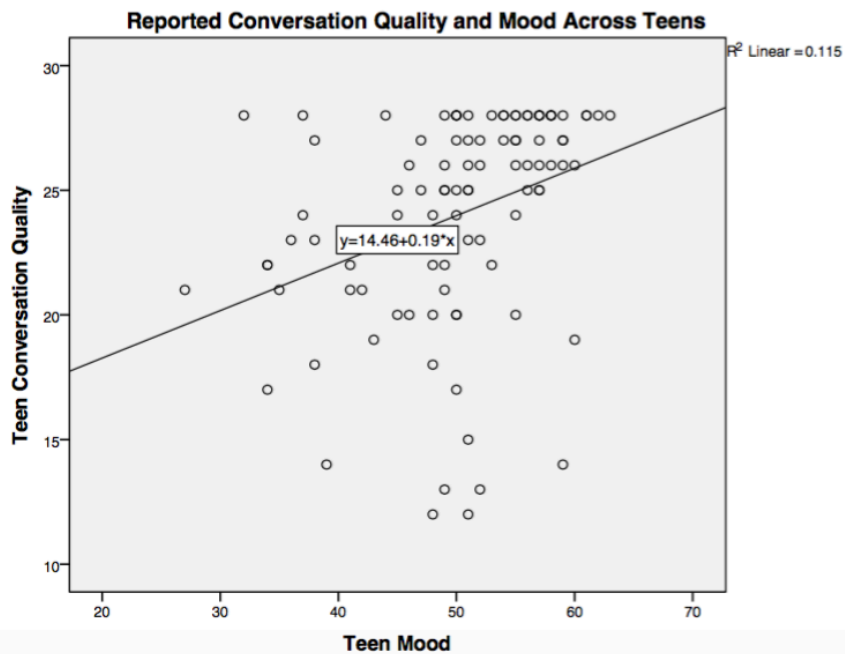
However, in line with previous works, age was added a covariate in the final analysis model to account for any potential differences according to our range (12-19 years) of adolescence studied and to account for any potential generational differences amongst parents.

Mood before experiment

Mood was found to account for a minimal amount of variance, $R^2 = .005$, with parents' reported conversation quality:



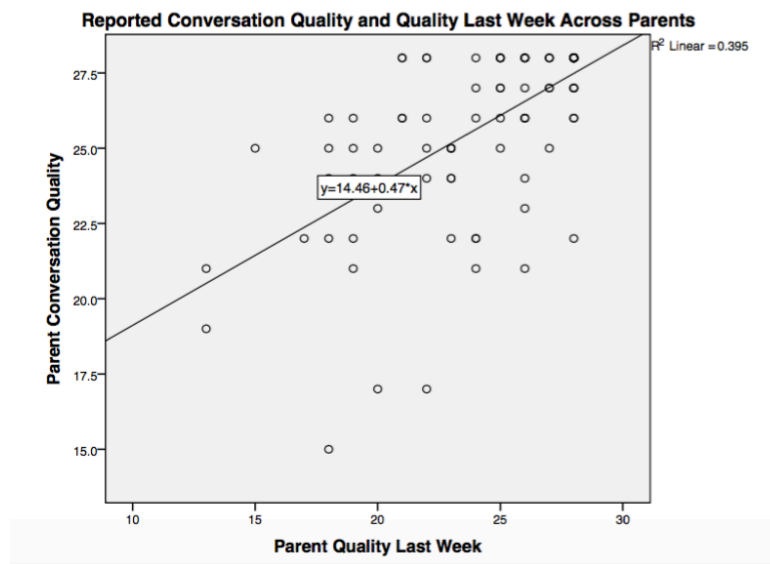
However, mood was found to account for a low amount of variance, $R^2 = .115$ with teens' reported conversation quality.

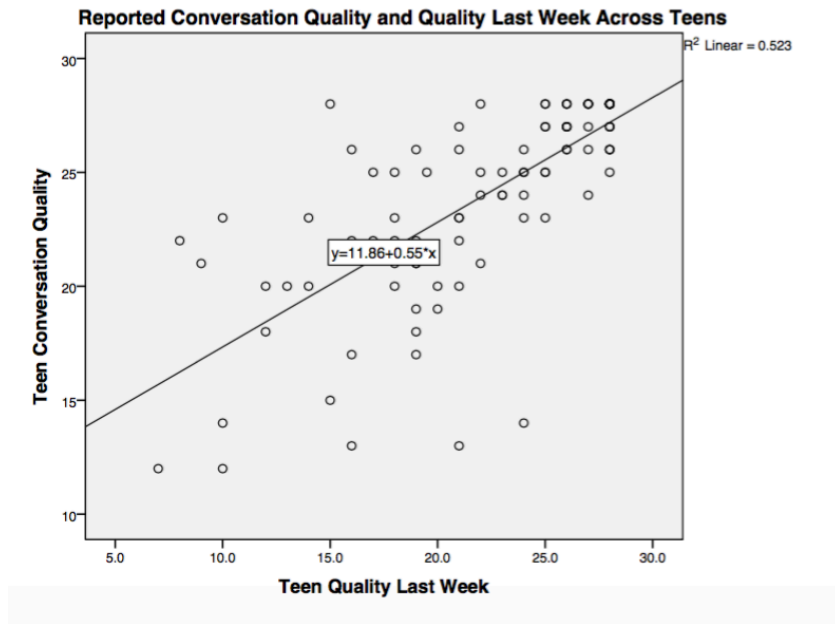


The higher value of mood R^2 indicates that mood accounts for more variance in reported conversation quality scores for teens, than mood can account for with parents. This could indicate that mood has more of an influence on teens than parents. Mood was therefore added as a covariate to the final analysis model to account for any influence of mood before the experiment.

Reported relationship quality during past week

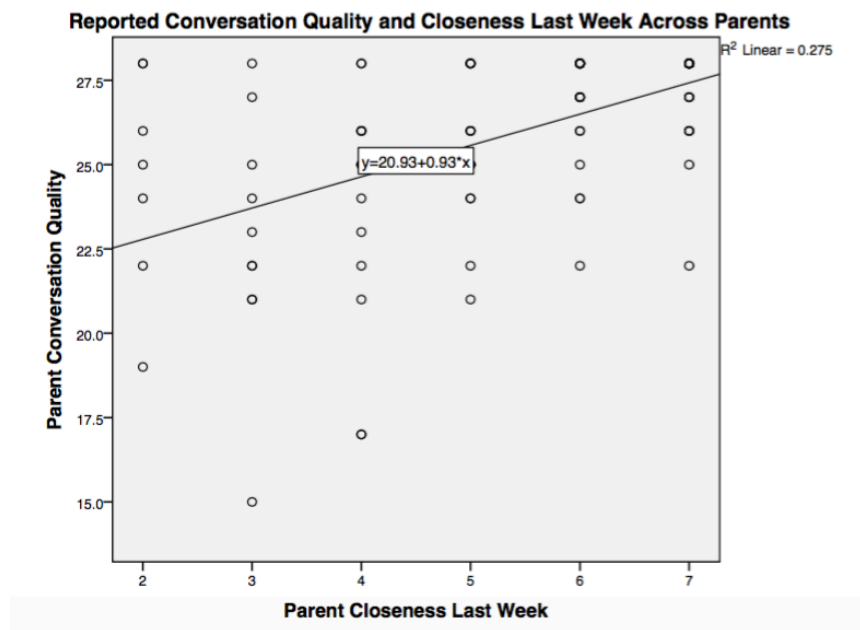
Reported relationship quality during the past week was found to account for a moderate amount of variance with reported conversation quality during the experiment for parents, $R^2 = .40$ and to account for a strong amount of variance for teens $R^2 = .52$, indicating that baseline experiences within the relationship have an effect on the reported experience in the lab. As such, reported quality during the past week was included as a covariate in the final conversation quality model.



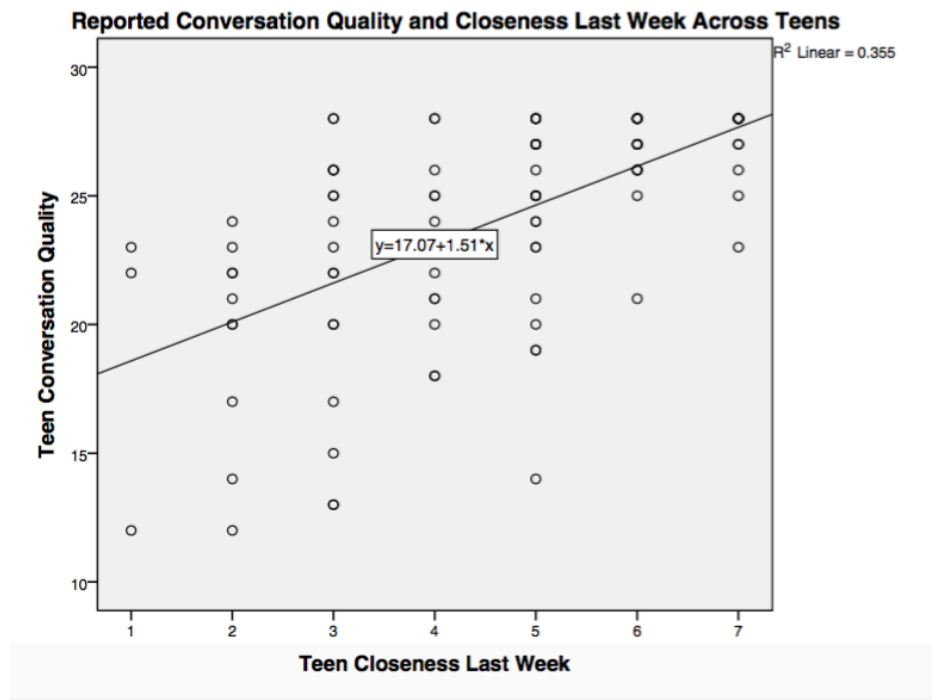


Reported closeness during past week

Reported closeness during the past week was also found to account for a low amount of variance with reported conversation quality during the experiment for parents, $R^2 = .28$:

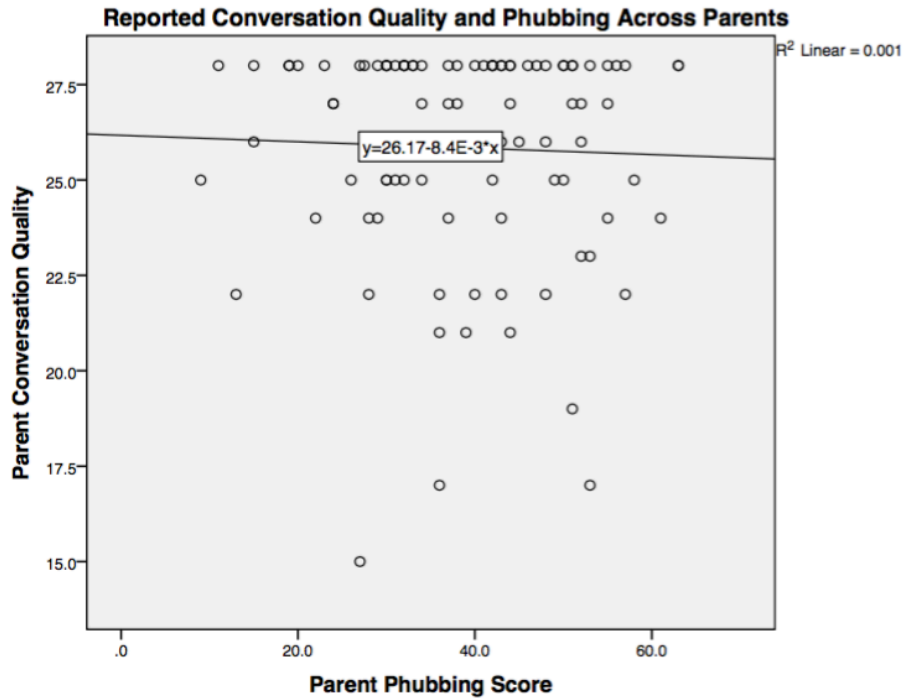


And to account for a moderate amount of variance with reported conversation quality for teens, $R^2 = .36$, further indicating that baseline experiences within the relationship have an effect on the reported experience in the lab. As such, reported closeness during the past week was included as a covariate in the final conversation quality model.

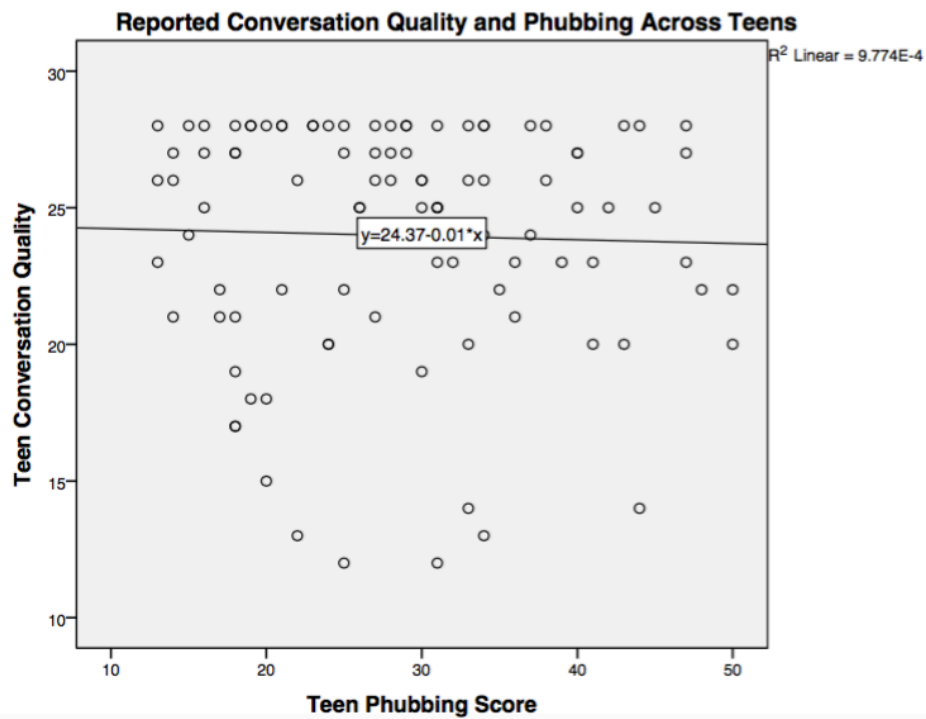


Reported phubbing within parent-teen relationship

Reported phubbing within parent-teen relationships was found to account for a minimal amount of variance with reported conversation quality for parents, $R^2 = .001$:

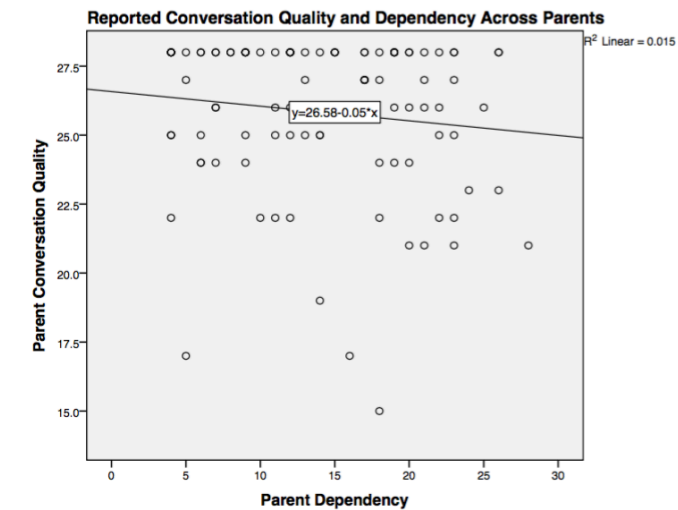


As well as for teens, $R^2 < .001$, supporting the exclusion of phubbing as a covariate to better understand reported conversation quality:

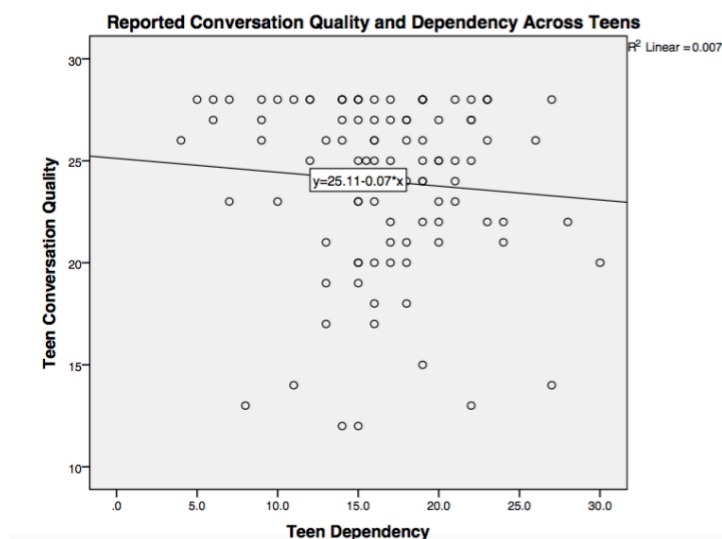


Phone dependency

Reported phone dependency was found to account for a minimal amount of variance with reported conversation quality for parents, $R^2 = .02$:



Reported phone dependency was also found to account for a minimal amount of variance for teens, $R^2 = .007$, supporting the exclusion of reported phone dependency as a covariate for conversation quality:



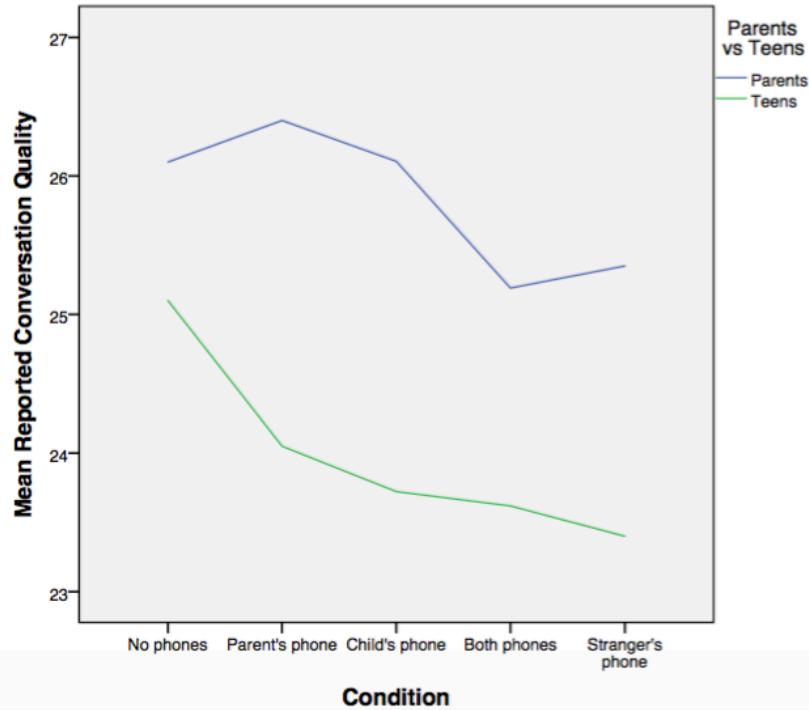
Summary of co-variates to be included in final model:

- (1) Age
- (2) Gender
- (3) Mood before experiment
- (4) Reported relationship quality during past week
- (5) Reported closeness during past week

Analysis

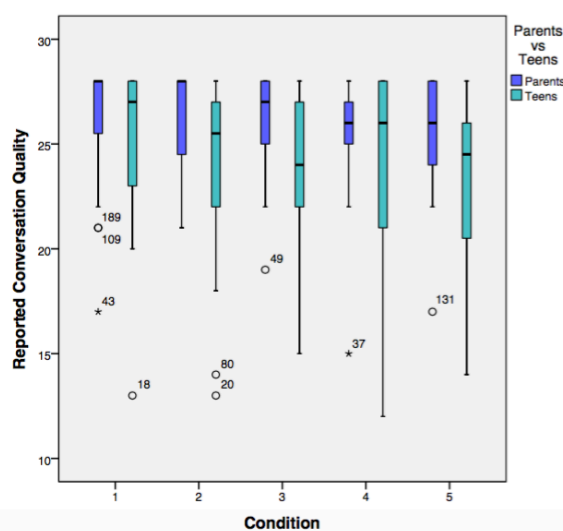
In previous studies, Hierarchical Linear Modeling was used for analysis to account for the non-independent nature of dyadic data. In these prior works, members of dyads could be pooled together as participant pairs were not considered to be uniquely different from each other (e.g., pairs of adult strangers or pairs of adult acquaintances). While dyads within this study are also non-independent, parents and teens report significantly different values across dependent variables. Therefore, pooling data of parents and teens together would remove our ability to see these differences and could potentially introduce a confound of pooling significantly divergent data together in one HLM analysis. As such, parent and teen data was stratified and a one-way between subjects ANOVA was chosen as the preferred method of analysis for each dependent variable. However, before separating parent and teen analysis, the following exploratory analysis of parents and teens provides insight into the differences in reported conversation quality across conditions:

Parents' and Teens' Average Reported Conversation Quality Across Conditions



On average, parents reported significantly higher average conversation quality than teens ($p < .000$). This finding also holds true when we look at ranges of parents and teens across conditions:

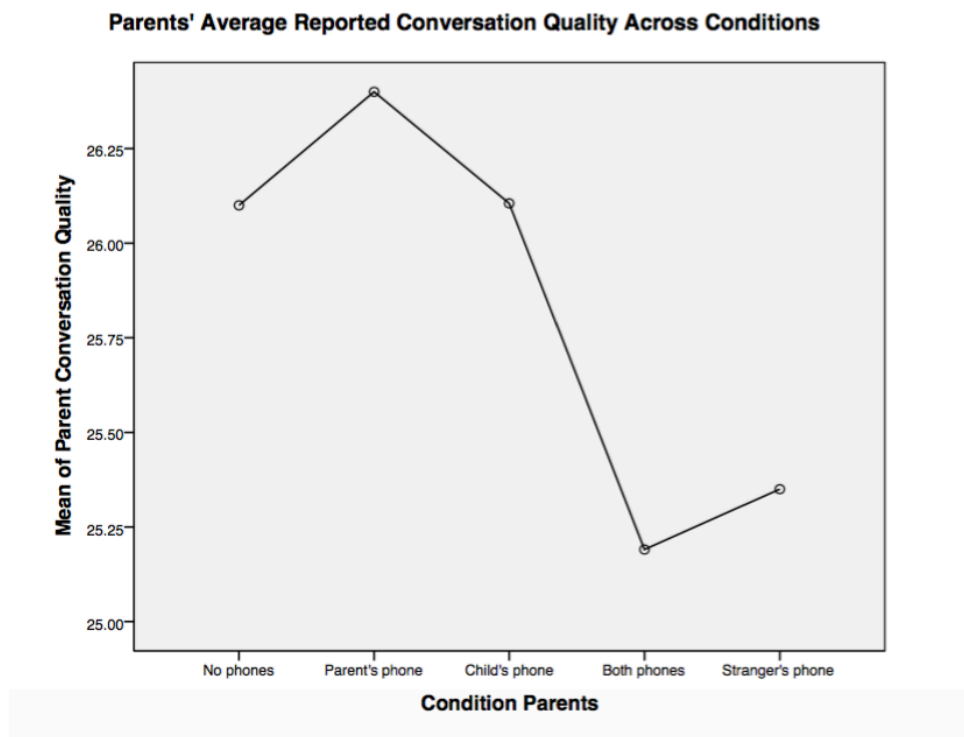
Parents' and Teens' Reported Conversation Quality Across Conditions



However, the range for parents tends to be smaller than teens, indicating that within the parents group, parents report more similar values of interaction quality. This could reflect parental pressure to report high levels of conversation quality because the study rationale was that we were examining parent-teen interactions.

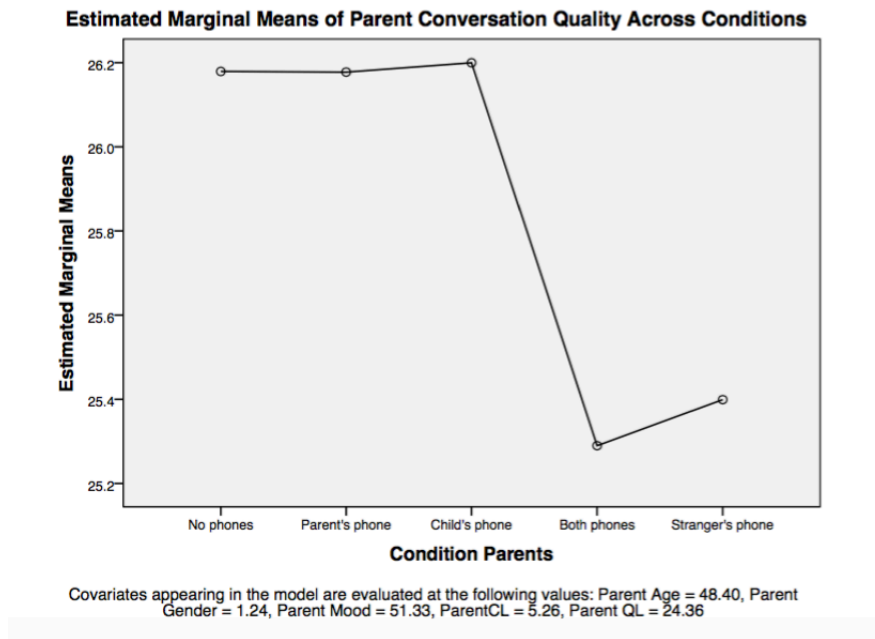
Parents

Looking at parents alone, the highest reported conversation quality occurred during the Parent's Phone ($M = 26.40$, $SD = 2.39$) condition and the lowest conversation quality reported occurs during the Both Phones ($M = 25.19$, $SD = 2.96$) condition:



However, results from a One-Way ANOVA reveal that differences between conditions are not significant ($F(4, 95) = .71$, $p = .59$), suggesting that the mere presence or absence of a mobile phone(s) has little effect on parents' experiences of conversation quality.

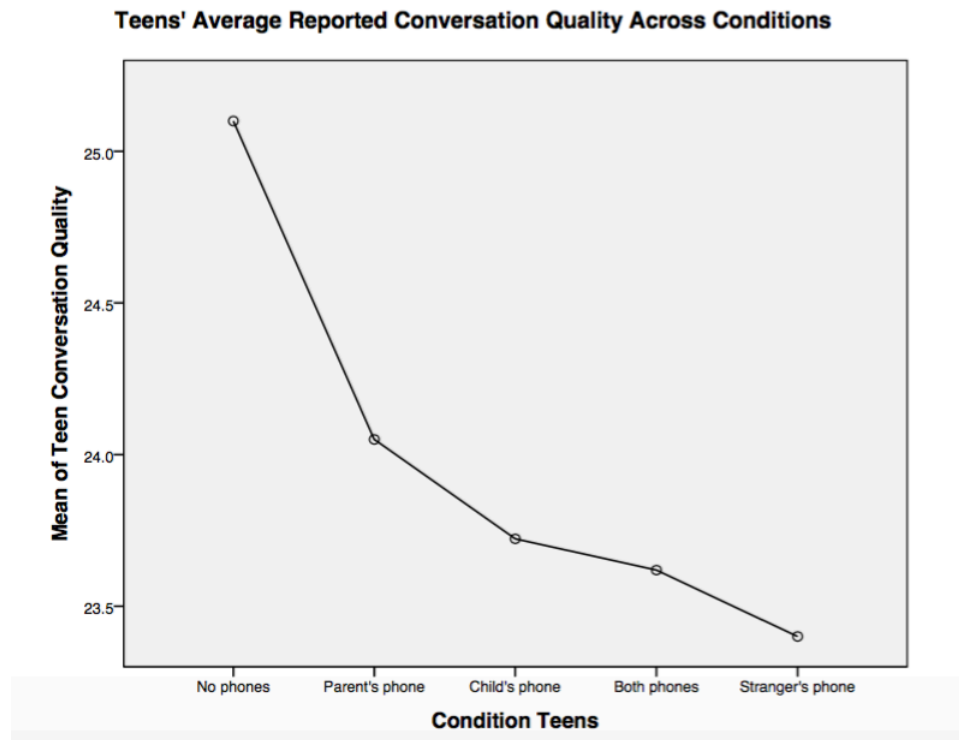
Including co-variates (age, gender, mood before, reported quality, and closeness in the past week) into the model, the most interesting shift occurs during the No Phones ($M = 26.18$, $SD = .50$), Parent's phone (26.18 , $SD = .49$), and Child's phone ($M = 26.02$, $SD = .52$) conditions as they appear to stabilize around similar reported conversation qualities:



Reported conversation quality remains similar in the Both Phones condition ($M = 25.29$, $SD = .48$), indicating that the presence of both phones could influence experiences of conversation quality regardless of baseline relationship quality outside of the laboratory setting. However, no overall effect ($F(4, 87) = .80$, $p = .53$) was found for mobile phone mere presence and perceived conversation quality at the $p < .05$ level, indicating that for parents conversation quality is not significantly affected by the mere presence or absence of mobile phones, even accounting for age, gender, mood, and baseline relationship quality and closeness.

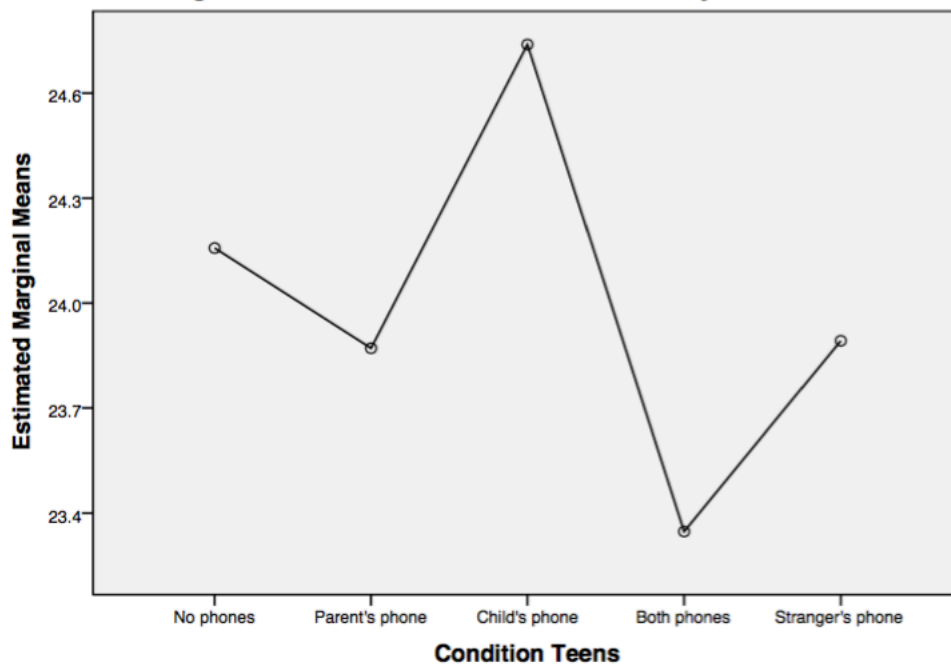
Teens

Looking at teens alone, we see a decline in reported conversation quality across conditions:



However, results from a One-Way ANOVA indicate that differences between conditions are not significant ($F(4, 94) = .49, p = .75$), indicating that the mere presence or absence of mobile phones does not have a significant influence on teens' experiences of conversation quality. Upon including co-variates (age, gender, mood before, reported quality, and closeness in the past week) into the model, the most dramatic shift occurs during the Child's Phone ($M = 24.74, SD = .71$) condition:

Estimated Marginal Means of Teens' Conversation Quality Across Conditions



Covariates appearing in the model are evaluated at the following values: Teen Age = 16.03, Teen Gender = 1.41, Teen Mood = 50.00, Teen QL = 22.136, TeenCL = 4.57

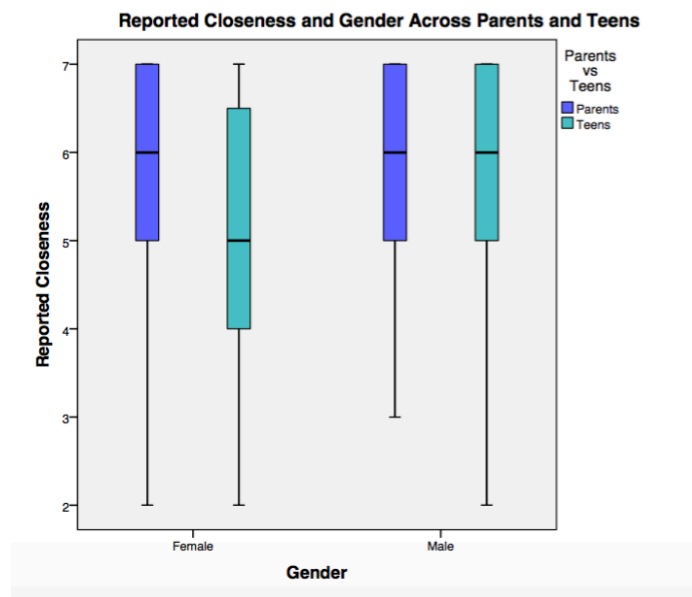
Accounting for age, gender, mood before, and baseline measurements of relationship quality and closeness, the previous downward direction ($M = 23.72$, $SD = 3.98$) of the Child's Phone condition reverses to being the highest reported quality condition. This suggests that accounting for influential covariates such as baseline measurements of quality and closeness, can provide insight into how children respond to in-the-moment questions. However, differences between conditions remain non-significant ($F(4, 89) = .55$, $p = .70$), indicating that mobile phone(s) mere presence or absence does not have a significant effect on teens' reported experiences of conversation quality.

Conversation Closeness

Parents' and teens' reported conversation closeness in reference to all potential covariates is explored below:

Gender

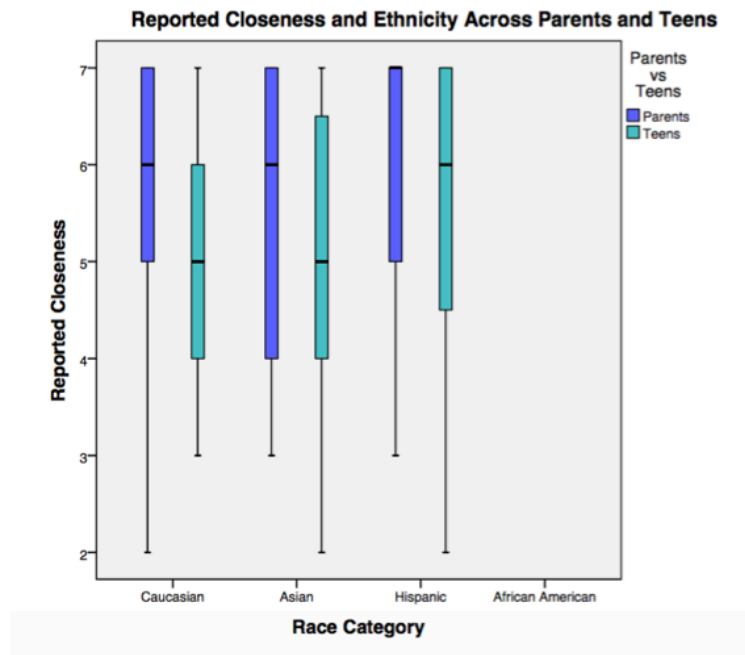
Two independent-samples t-test were conducted to compare reported conversation closeness for males and females across parents and teens. No significant difference was found for males' and females' reported conversation closeness for parents ($t(98) = .085$, $p = .08$) or for teens ($t(98) = -1.427$, $p = .38$), indicating that gender does not have a significant effect on reported experiences of conversational quality. However, as parents' responses are approaching significance and gender was used in previous works as a covariate, gender was added as a covariate in the final analysis model. A visualization of the differences between females and males across parents and teens is depicted in the boxplot below:



Ethnicity

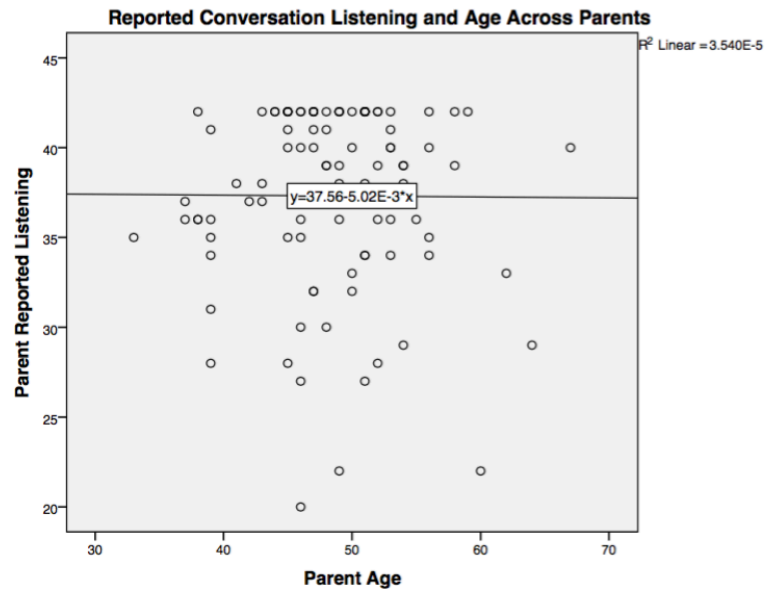
A one-way between subjects ANOVA was conducted for both parents and teens to compare the effect of ethnicity on reported conversation closeness. Ethnicity was found to

have little effect on reported conversation closeness for parents, $F(2, 93) = .35, p = .71$, with Caucasians ($M = 5.64, SD = 1.56$), Asians ($M = 5.64, SD = 1.40$), and Hispanics ($M = 6.00, SD = 1.35$) reporting similar experiences of conversation closeness. Ethnicity was also found to have little effect on reported conversation closeness for teens, $F(3, 95) = .844, p = .47$, with Caucasians ($M = 5.07, SD = 1.24$), Asians ($M = 5.29, SD = 1.37$), Hispanics ($M = 5.50, SD = 1.67$), and African American (M and SD excluded to maintain confidentiality) reporting similar experiences of conversation closeness. Lack of evidence for ethnicity and reported conversation closeness combined with no strong hypotheses that ethnicity would have an effect on reported conversation closeness for parents and teens, supports the exclusion of ethnicity as a covariate in order to maintain degrees of freedom in the final conversation closeness model.

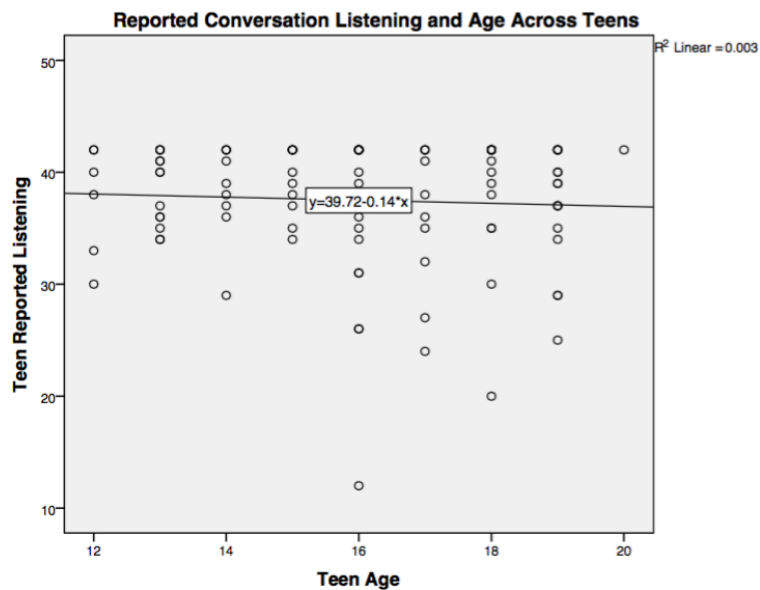


Age

Age was found to account for a minimal amount of reported conversation closeness for parents, $R^2 < .001$:



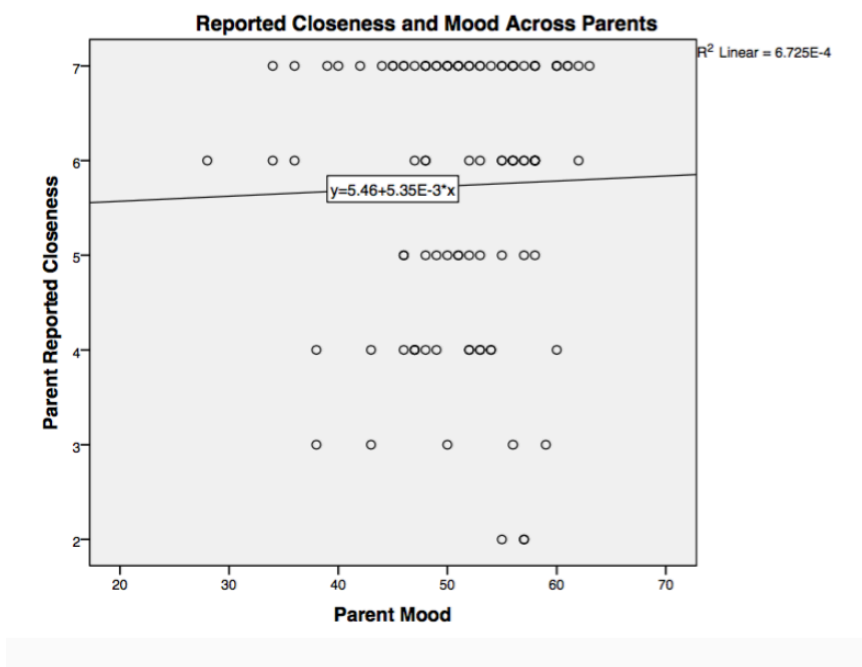
Age was also found to account for a minimal amount of reported conversation closeness for teens, $R^2 = .003$:



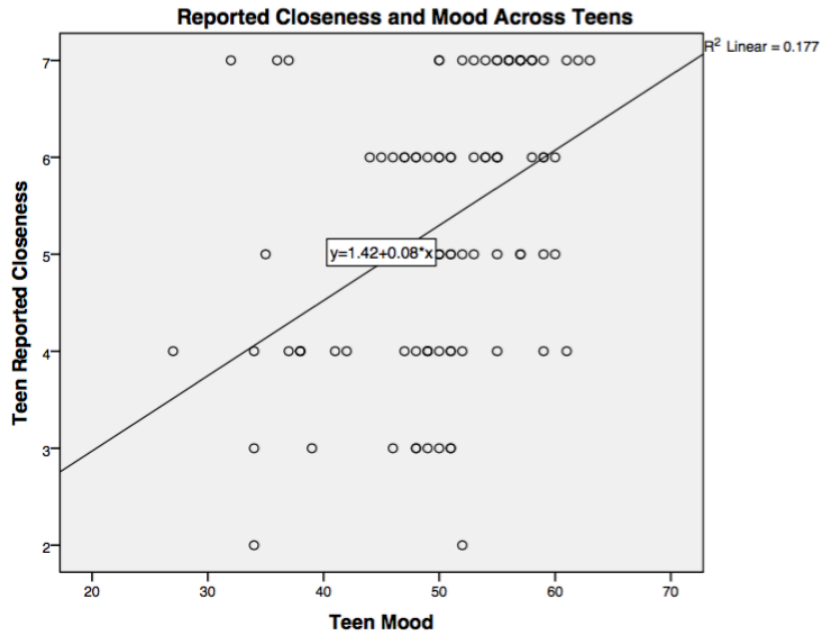
However, in line with previous works, age was added a covariate in the final analysis model to account for any potential differences according to our range (12-19 years) of adolescence studied and to account for any potential generational differences amongst parents.

Mood before experiment

Mood was found to account for a minimal amount of, $R^2 = .06$, parents' reported conversation closeness:



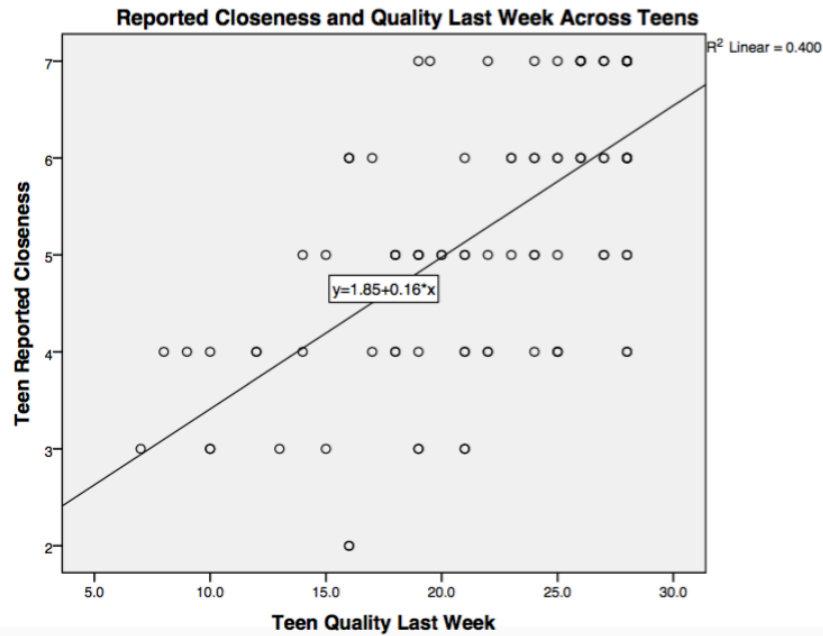
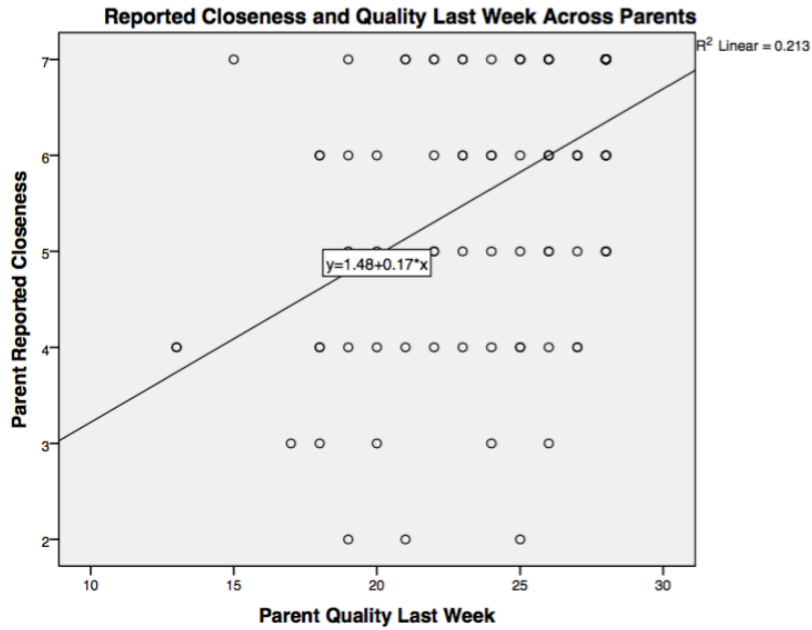
However, mood was found to account for a low amount of, $R^2 = .177$ with teens' reported conversation closeness, indicating again that teens might be more affected by mood than parents:



Mood was therefore added as a covariate to the final analysis model to account for any influence of mood before the experiment, similar to the inclusion of mood in previous works.

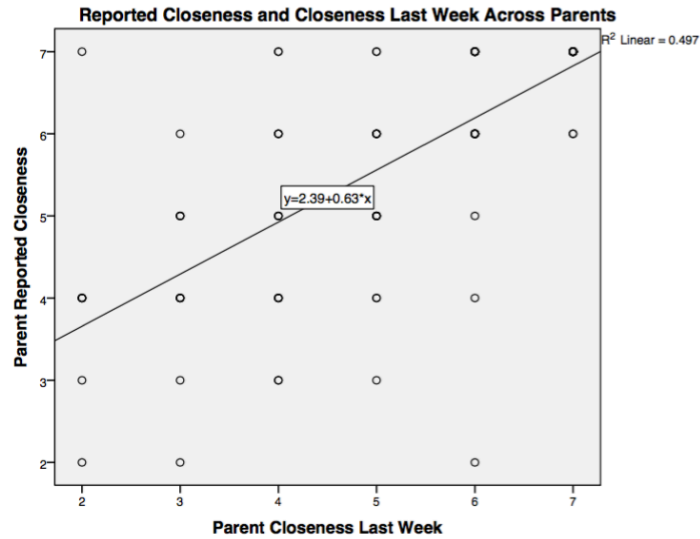
Reported quality during past week

Reported quality during the past week was found to account for a low amount of reported conversation closeness for parents, $R^2 = .21$ and a moderate amount of variance for teens $R^2 = .40$, indicating that baseline experiences within the relationship have an effect on the reported experience in the lab. As such, reported conversation quality during the past week was included as a covariate in the final conversation closeness model.



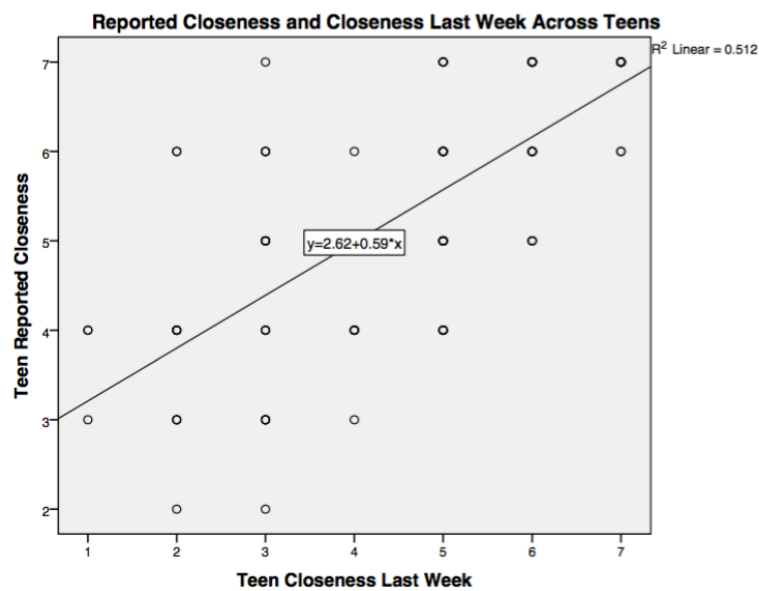
Reported closeness during past week

Reported closeness during the past week was also found to account for a strong amount of reported conversation closeness for parents, $R^2 = .50$:



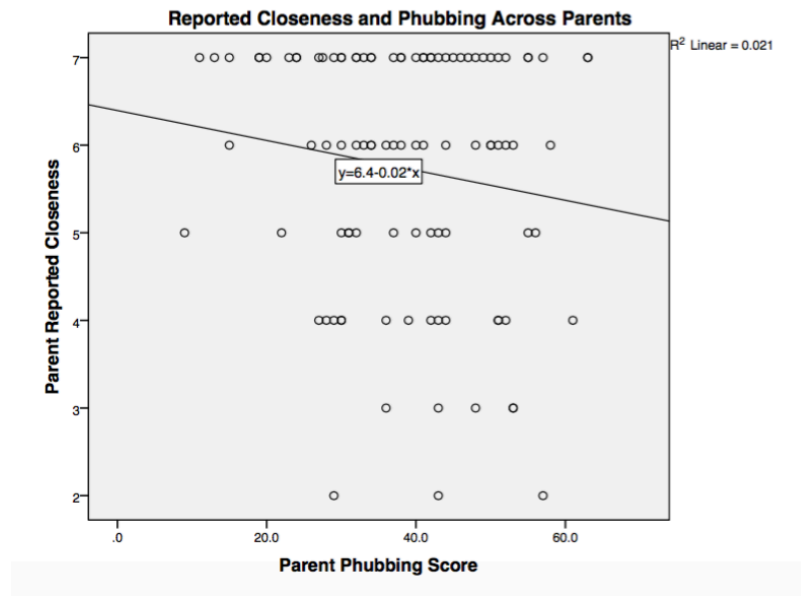
And a strong amount of variance for reported conversation closeness for teens, $R^2 = .51$, further indicating that baseline experiences within the relationship have an effect on the reported experience in the lab. As such, reported quality during the past week was included as a covariate in the final conversation closeness model.

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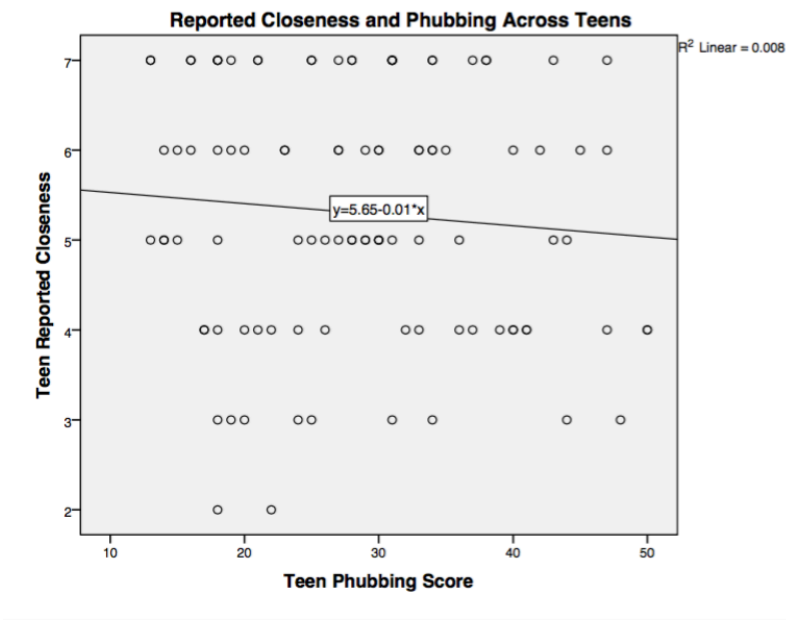


Reported phubbing within parent-teen relationship

Reported phubbing within parent-teen relationships was found to account for a minimal amount of reported conversation closeness for parents, $R^2 = .02$:

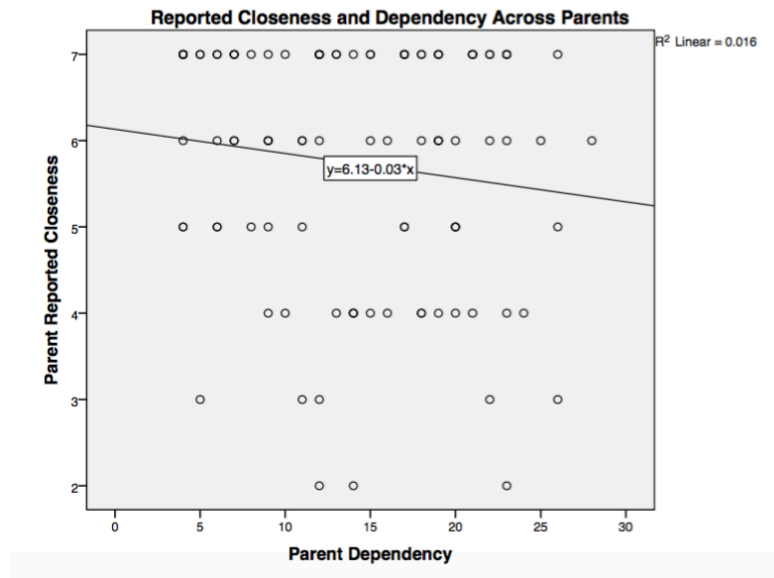


As well as for teens, $R^2 < .001$, supporting the exclusion of phubbing as a covariate to better understand reported conversation closeness:

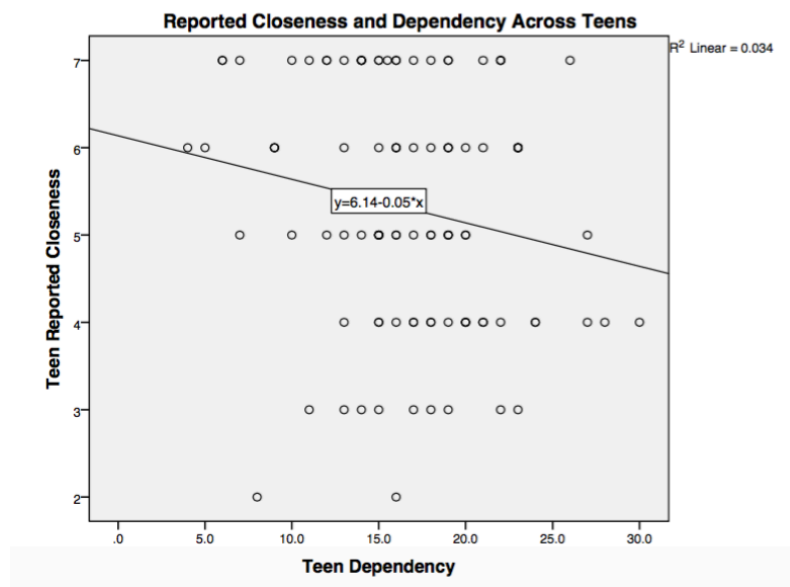


Reported phone dependency

Reported phone dependency was found to account for a minimal amount of reported conversation closeness for parents, $R^2 = .02$:



As well as for teens, $R^2 = .03$, supporting the exclusion of reported phone dependency as a covariate for conversation quality:

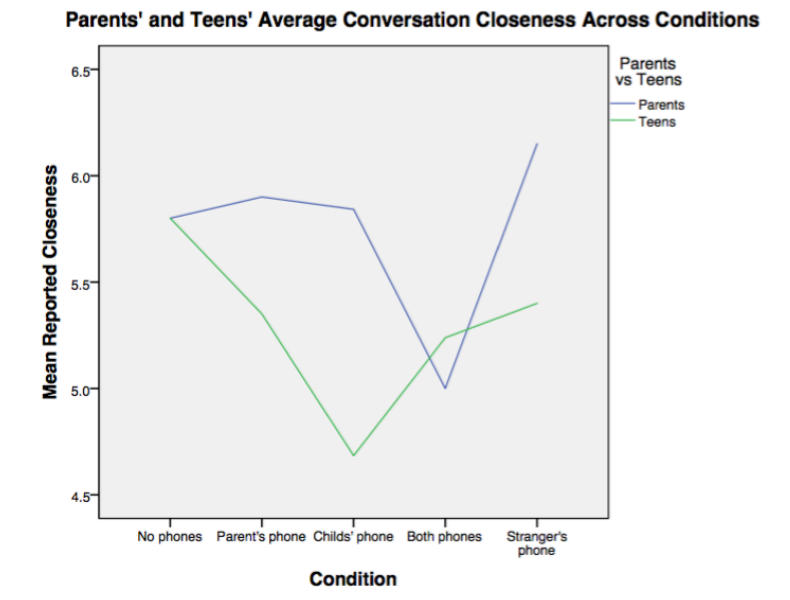


Summary of additional co-variates to be included in final model:

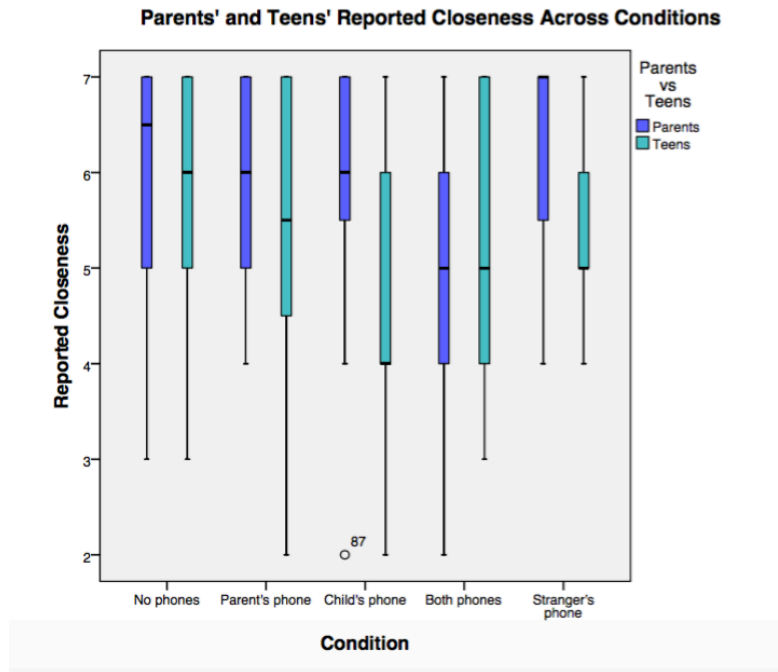
- (1) Age
- (2) Gender
- (3) Mood before the experiment
- (4) Reported quality during past week
- (5) Reported closeness during past week

Exploration of parents versus teens

Parents and teens also report significantly different $(1, 196) = 4.715, p = .031$, values of conversation closeness:

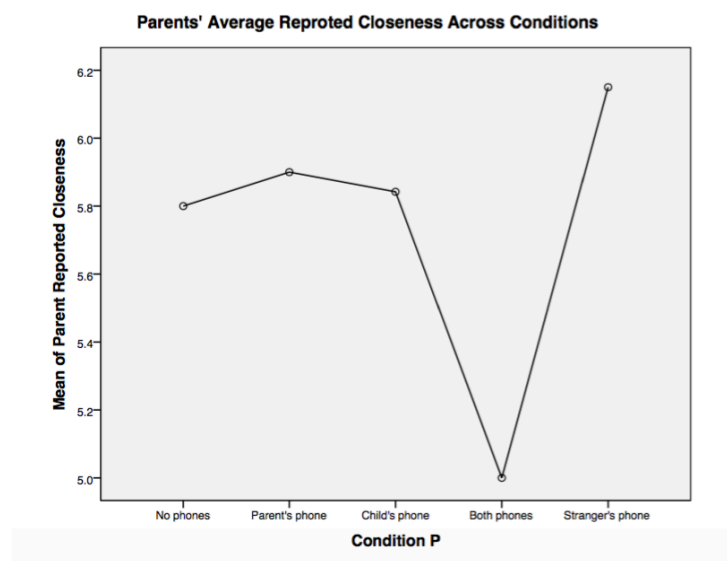


On average, parents consistently reported higher average conversation closeness than teens except for in the Both Phones condition. This finding holds true when we look at ranges of parents and teens across conditions:



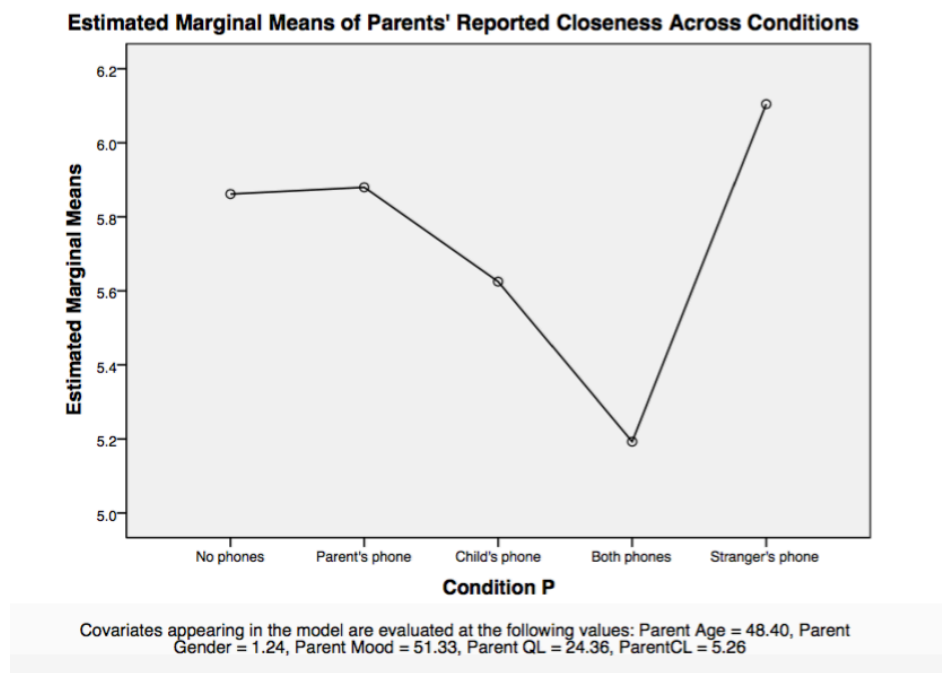
Parents

Looking at parents alone, we see the lowest reported conversation closeness during the Both Phones ($M = 5.00$, $SD = 1.70$) condition and Stranger's phone as the highest ($M = 6.15$, $SD = 1.14$):



However, results from a One-Way ANOVA of parents indicates that differences between conditions are not significant ($F(4, 95) = 2.00, p = .10$), suggesting that the mere presence or absence of a mobile phone(s) has little effect on parents' experiences of conversation closeness.

Upon including co-variates (age, gender, mood before, reported quality, and closeness in the past week) into the model, the direction of the effects for parents remains similar:

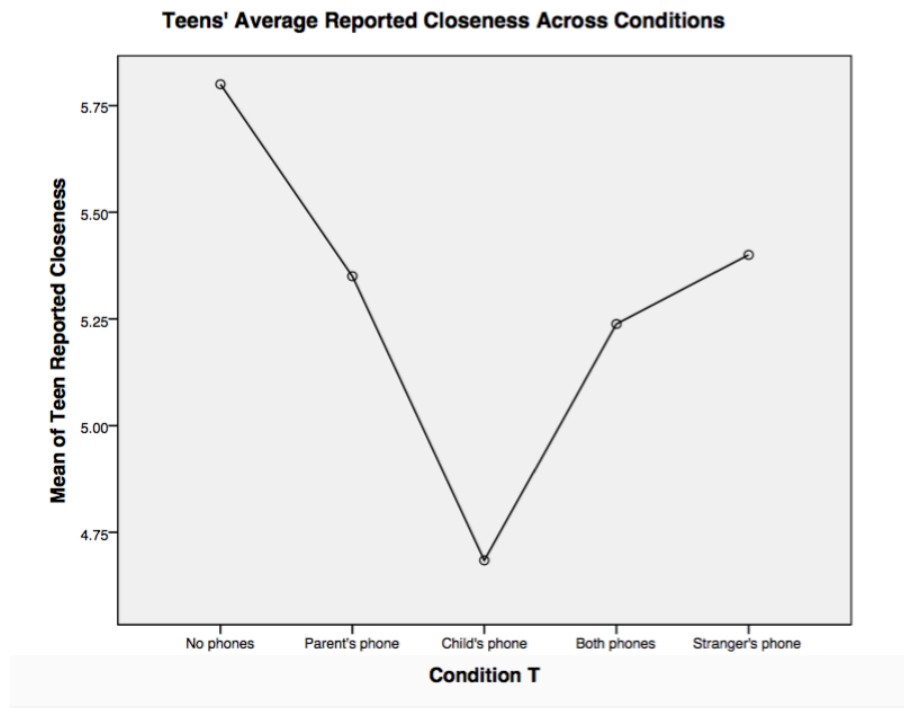


However, a more precise measurement of reported closeness achieved by accounting for potential covariates, reveals a nearly significant effect ($F(4, 87) = 2.27, p = .07$) for mere presence or absence of mobile phones and perceived conversation closeness at the $p < .05$ level. Post hoc comparisons using Fisher's Least Significant Difference reveals that the Both Phone's condition ($M = 5.19, SE = .23$) resulted in significantly lower reported

scores of perceived conversation closeness than the No Phones condition ($M = 5.86$, $SE = .24$, $p = .05$), Parent's Phone condition ($M = 5.88$, $SE = .23$, $p = .04$), and the Stranger's Phone condition ($M = 6.11$, $SE = .25$, $p = .007$). This indicates that mere presence or absence of mobile phones has a small effect on parents' reported closeness when the number of phones passes a threshold of multiple devices present during the conversation.

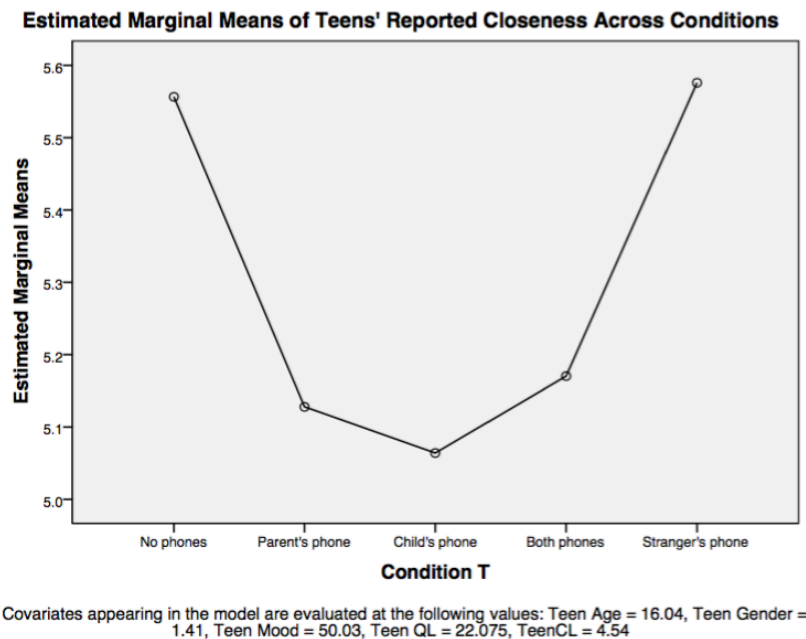
Teens

Looking at teens alone, we see the lowest reported conversation quality during the Child's Phone ($M = 4.68$, $SD = 1.25$) condition and the highest during the No Phones condition ($M = 5.80$, $SD = 1.24$):



Results from a One-Way ANOVA indicate that differences between conditions are not significant ($F(4, 95) = 1.67, p = .16$). Yet, post-hoc Fisher's Least Significant Difference reveals that the Child's Phone condition ($M = 4.68, SE = 1.25$) approaches a significantly reported lower value ($p = .09$) than the No Phone's condition ($M = 5.80, SE = 1.24$).

Including co-variates (reported quality and closeness in the past week) into the model, the most dramatic shift occurs during the Parent's Phone ($M = 5.13, SD = .22$), Child's Phone ($M = 5.06, SD = .22$), and Both Phones ($M = 5.17, SD = .21$) conditions:



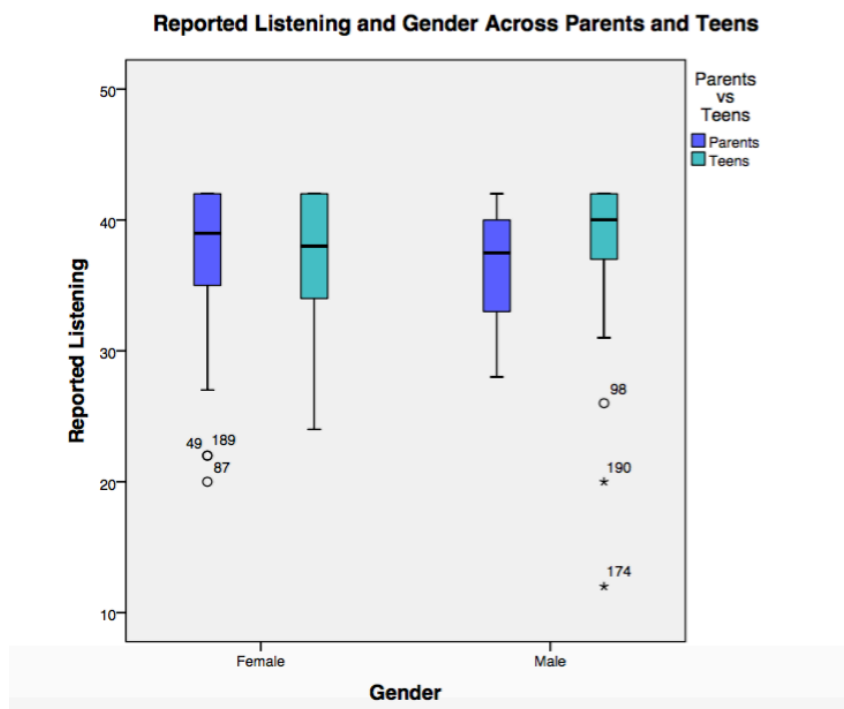
However, differences remain non-significant ($F(4, 90) = 1.28, p = .29$) and the previous post-hoc analysis of the Child's Phone condition moves away from approaching significance ($p = .12$). These findings further support the importance of including covariates when interpreting in-the-moment reports of conversation closeness.

Experiences of Conversation Partner Listening

Parents' and teens' reported experiences of conversation partner listening in reference to all potential co-variates is explored below:

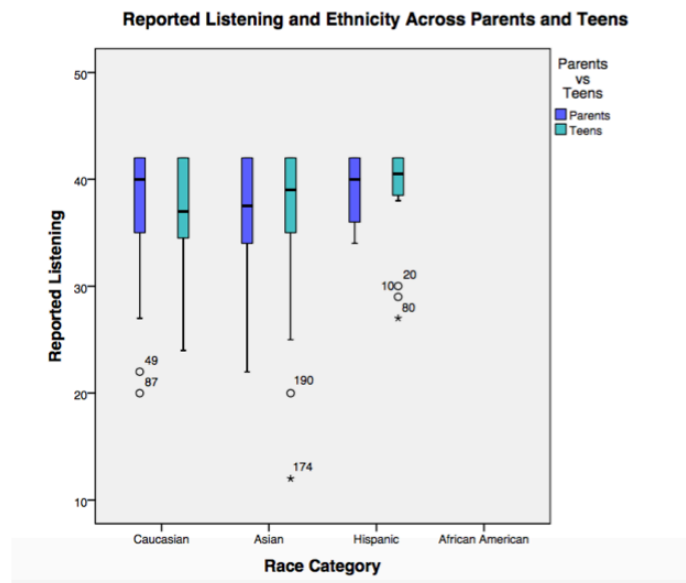
Gender

Independent-samples t-tests were conducted to compare reported conversation experiences of listening for males and females across parents and teens. No significant difference was found for males' and females' reported conversation experiences of listening for parents ($t(98) = .62, p = .43$) or for teens ($t(97) = -.97, p = .64$). However, gender was included in the final model to maintain consistency across dependent variable analysis.



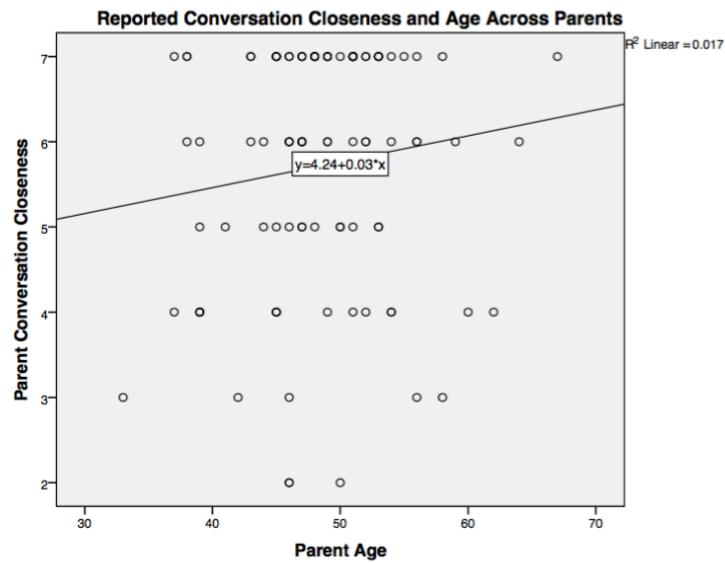
Ethnicity

A one-way between subjects ANOVA was conducted for both parents and teens to compare the effect of ethnicity on reported conversation experiences of listening. Ethnicity was found to have little effect on reported conversation experiences of listening for parents, $F(2, 93) = .77, p = .47$, with Caucasian ($M = 37.27, SD = 6.12$), Asian ($M = 36.64, SD = 4.92$), and Hispanic ($M = 38.85, SD = 3.29$) reporting similar experiences of listening. Ethnicity was also found to have little effect on reported experiences of listening for teens, $F(3, 94) = .47, p = .70$, with Caucasian ($M = 36.96, SD = 5.45$), Asian ($M = 35.96, SD = 4.81$), Hispanic ($M = 38.50, SD = 5.07$), and African American (M and SD excluded to maintain confidently) reporting similar experiences of conversation listening. Lack of evidence for ethnicity and reported conversation partner listening combined with no strong hypotheses that ethnicity would have an effect on reported conversation partner listening for parents and teens, supports the exclusion of ethnicity as a covariate in order to maintain degrees of freedom in the final conversation partner listening model.

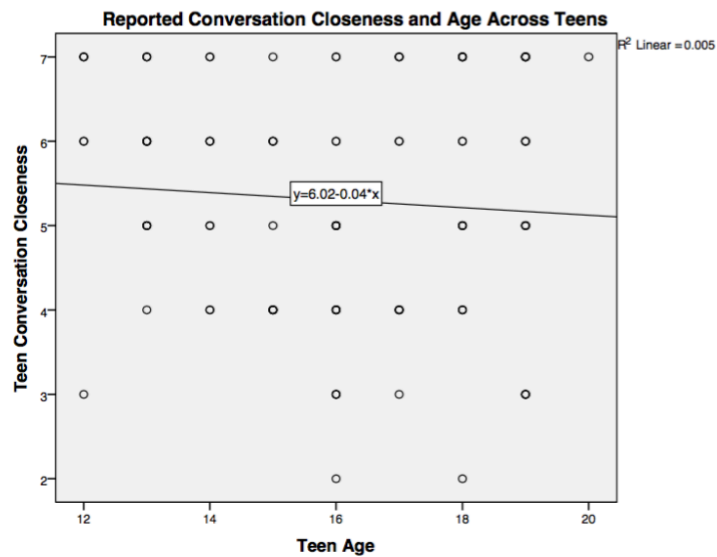


Age

Age was found to account for a minimal amount of reported experiences of conversation listening for parents, $R^2 = .017$:



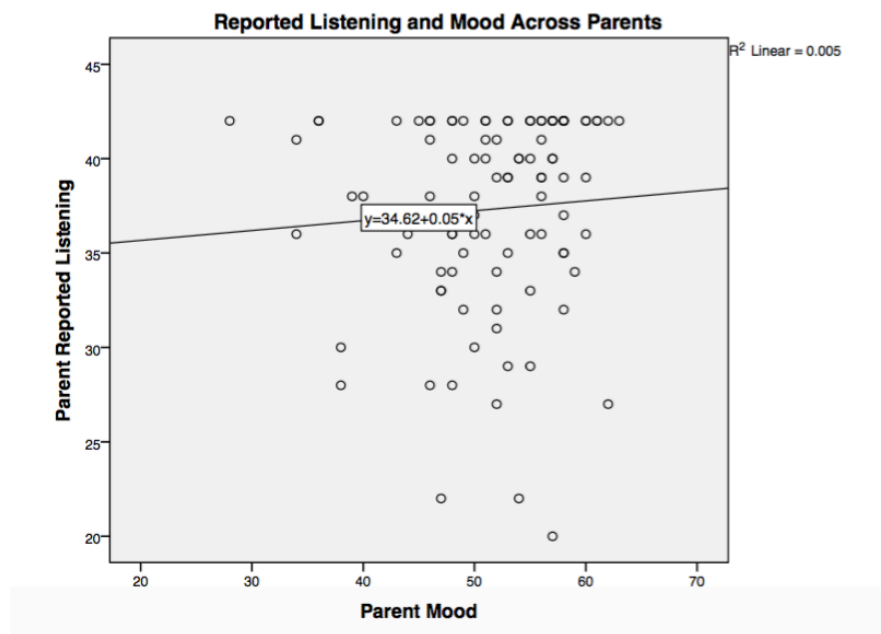
Age was also found to account for a minimal amount of reported conversation closeness for teens, $R^2 = .005$:



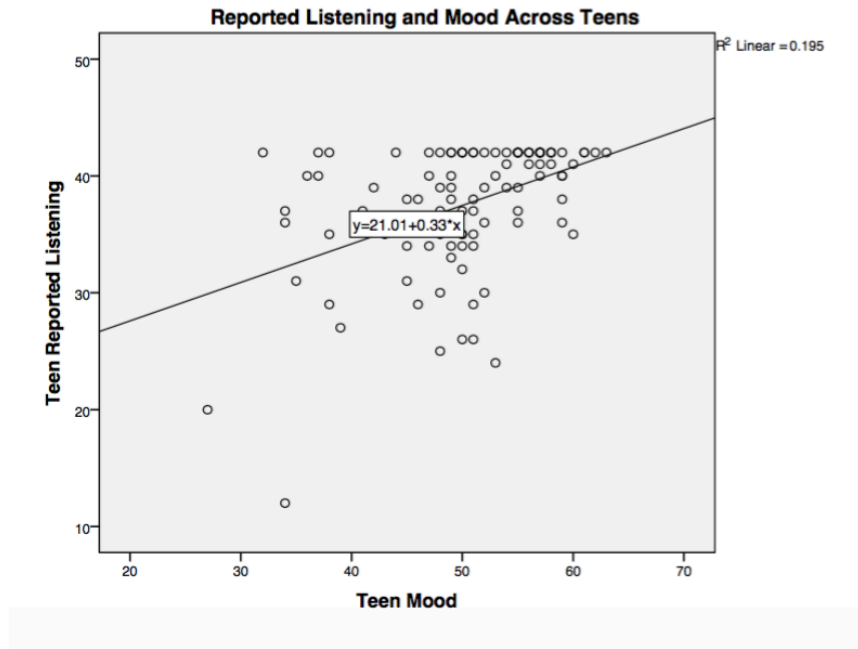
However, in line with previous works, age was added a covariate in the final analysis model to account for any potential differences according to our range (12-19 years) of adolescence studied and to account for any potential generational differences amongst parents.

Mood before experiment

Mood was found to account for a minimal amount of, $R^2 = .005$, parents' reported experiences of conversation partner listening:



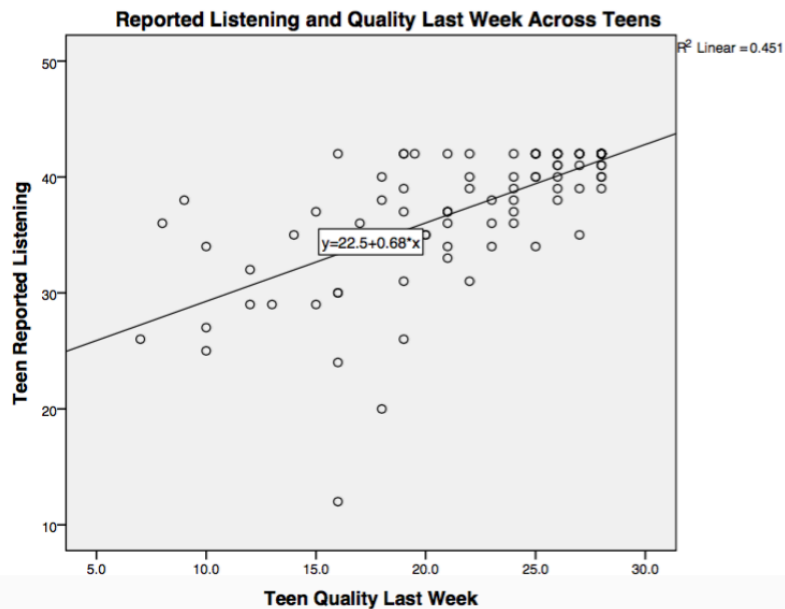
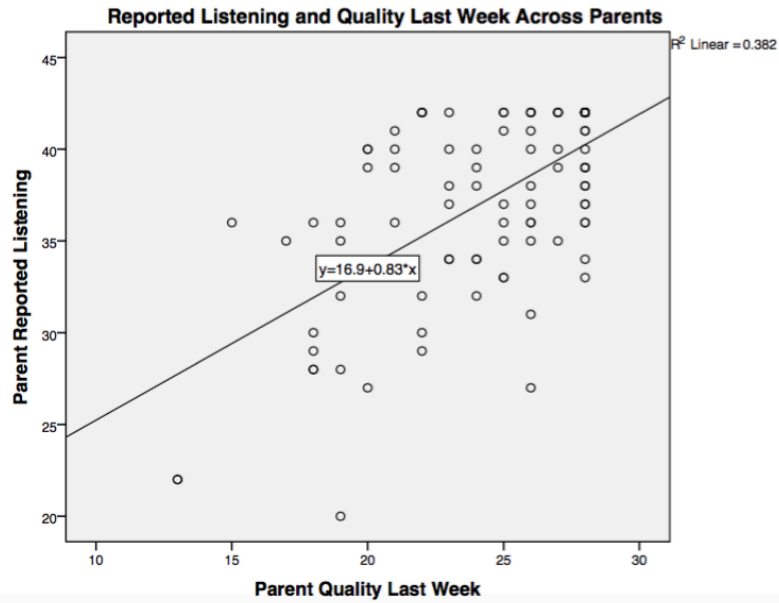
However, mood was found to account for a low amount of, $R^2 = .20$, teens' reported conversation listening, indicating again that teens might be more affected by mood than parents:



Mood was therefore added as a covariate to the final analysis model to account for any influence of mood before the experiment.

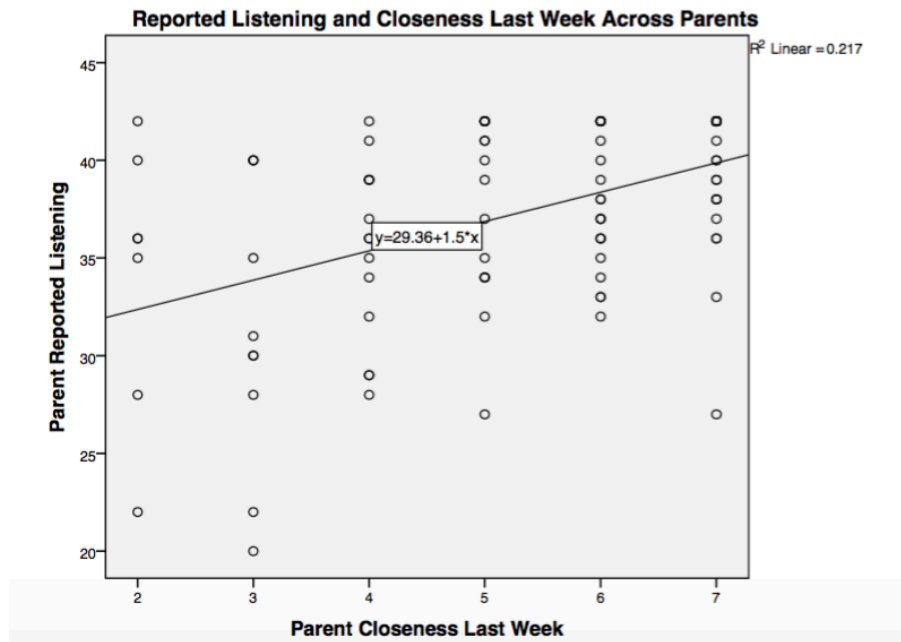
Reported relationship quality during past week

Reported relationship quality during the past week was found to account for a moderate amount of reported conversation listening for parents, $R^2 = .38$ and to account for a strong amount of variance for teens $R^2 = .45$, indicating that baseline experiences within the relationship have an effect on the reported experience in the lab. As such, reported quality during the past week was included as a covariate in the final conversation quality model.

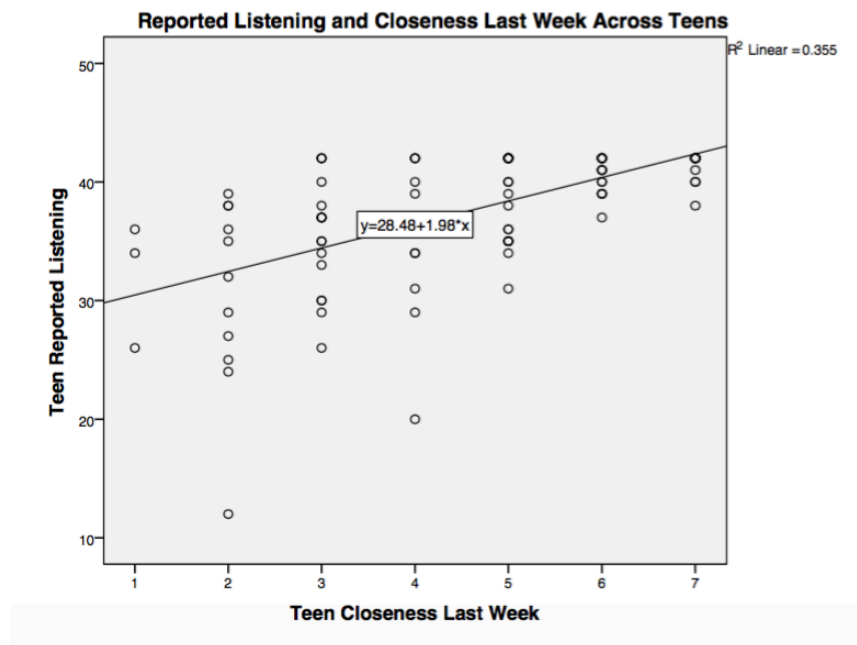


Reported closeness during past week

Reported closeness during the past week was also found to account for a low amount of reported conversation listening for parents, $R^2 = .22$:

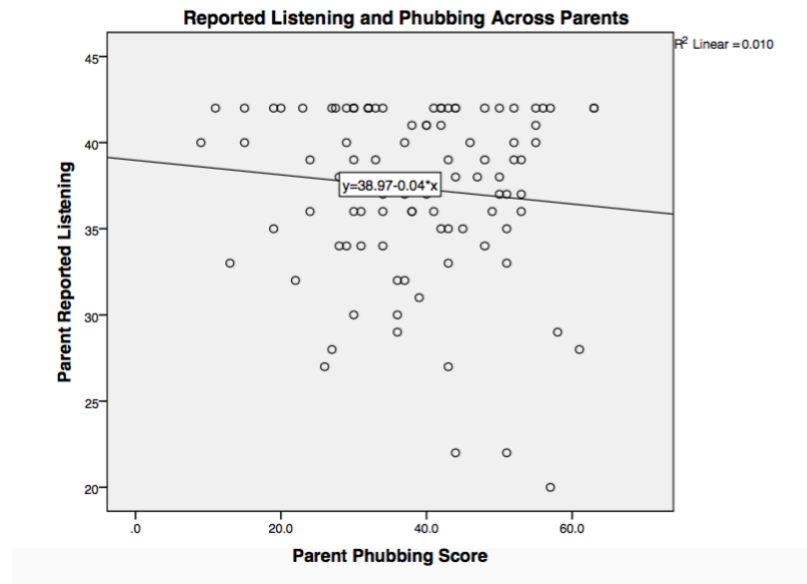


And a moderate amount of variance of reported conversation listening for teens, $R^2 = .36$, further indicating that baseline experiences within the relationship have an effect on the reported experience in the lab:

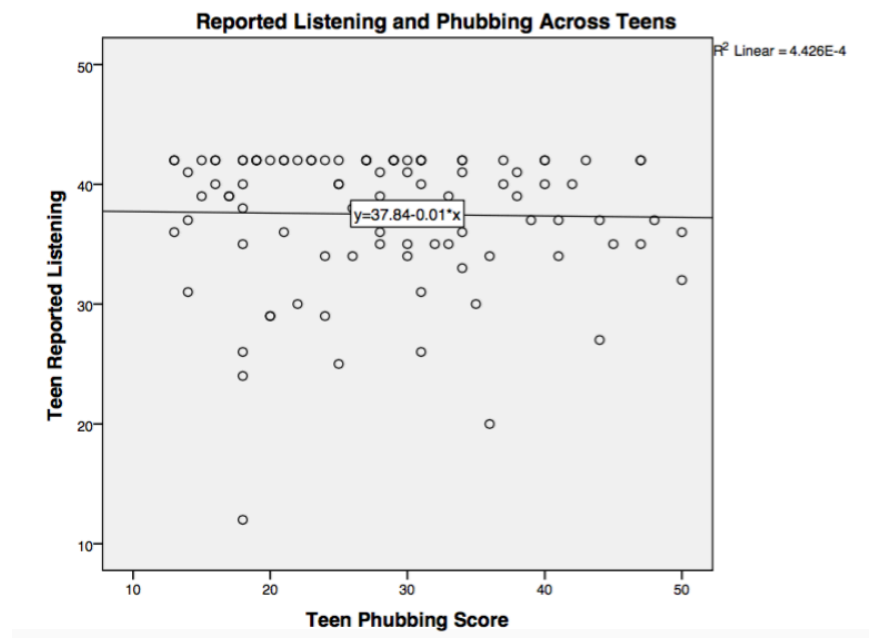


Reported phubbing within parent-teen relationship

Reported phubbing within parent-teen relationships was found to account for a minimal amount of reported conversation partner listening for parents, $R^2 = .01$:

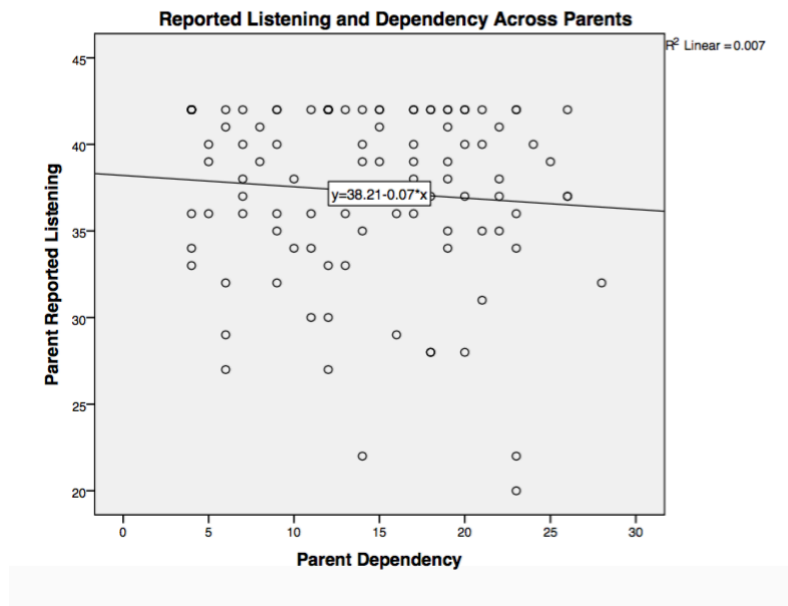


As well as for teens, $R^2 < .001$, supporting the exclusion of phubbing as a covariate to better understand reported conversation partner listening:

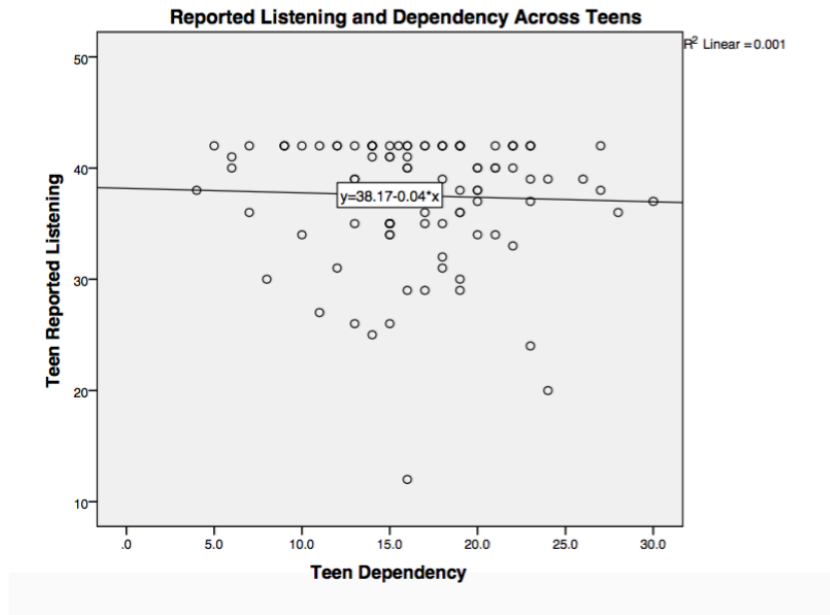


Reported dependency

Reported phone dependency was found to account for a minimal amount of conversation listening for parents, $R^2 = .007$:



As well as for teens, $R^2 = .001$, supporting the exclusion of reported phone dependency as a covariate for conversation listening:

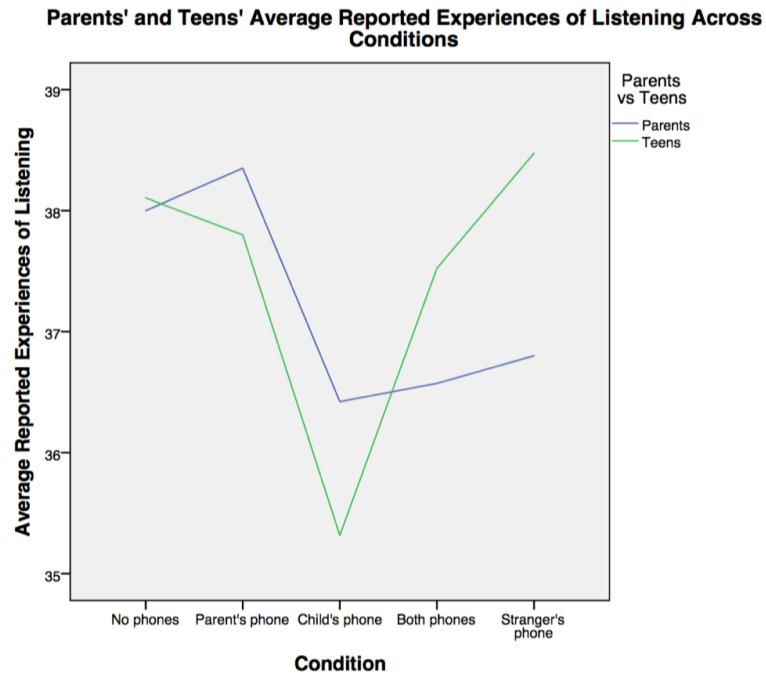


Summary of co-variates to be included in final model:

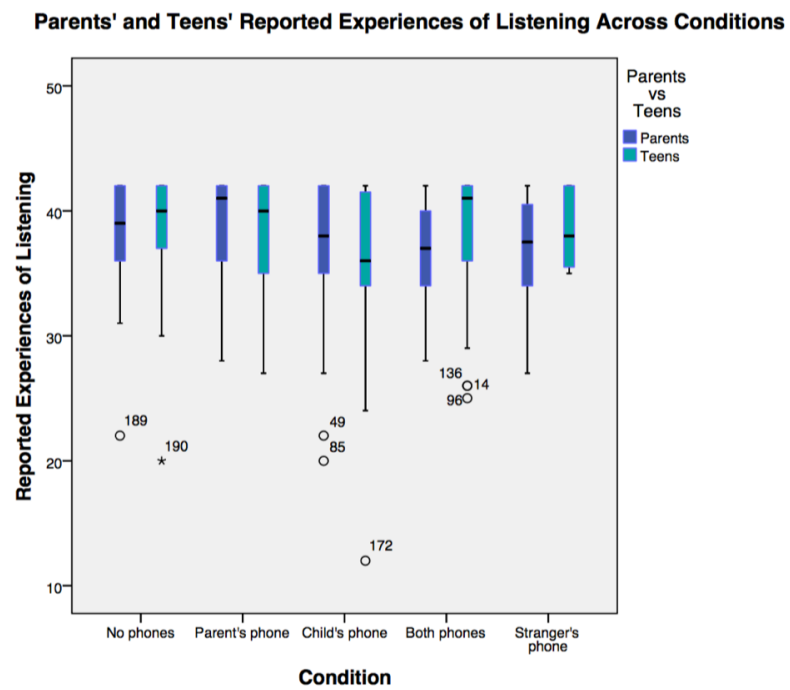
- (1) Age
- (2) Gender
- (3) Mood before experiment
- (4) Reported quality during past week
- (5) Reported closeness during past week

Exploration of parents versus teens

No significant differences for parents and teens, $F(1, 195) = .087, p = .768$ were found for the reported experiences of listening across conditions. Parents and teens reported similar experiences of listening from their conversation partners:

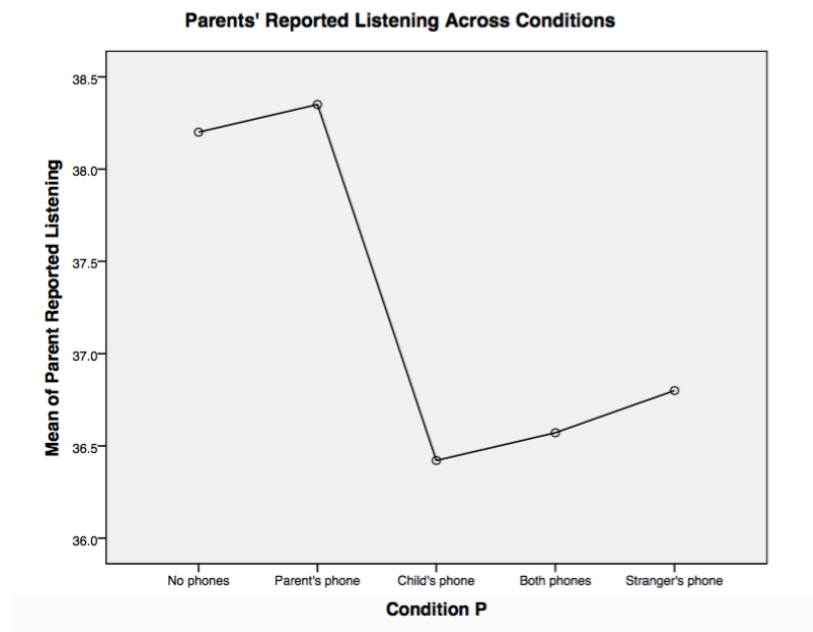


The range of parents and teens across conditions is also similar:

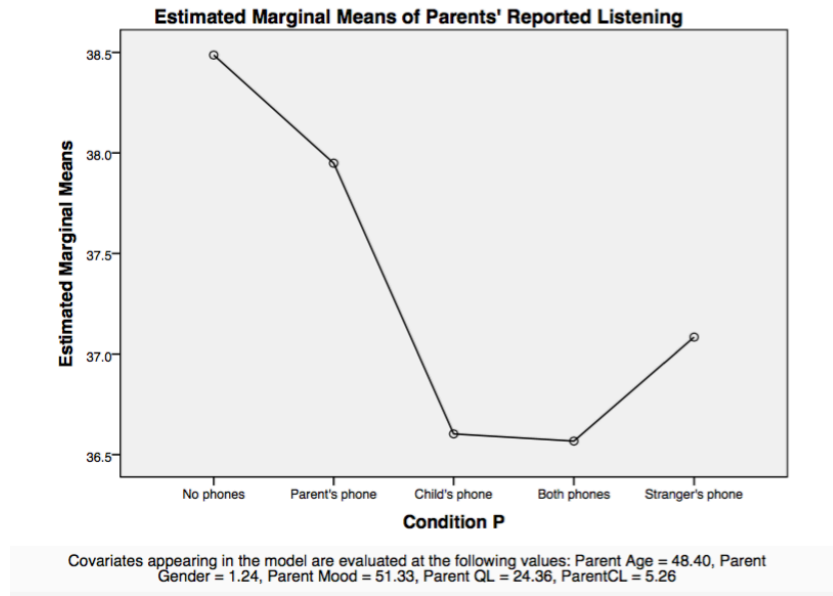


Parents

Looking at parents alone, we see the highest reported experience of conversation partner listening occurs during the Parent's Phone ($M = 38.35$, $SD = 4.87$) condition and the lowest reported experience of listening during the Child Phone's ($M = 36.42$, $SD = 6.73$) condition. Suggesting that parents might struggle with the presence of their child's phone when interpreting their child's level of listening during a conversation:



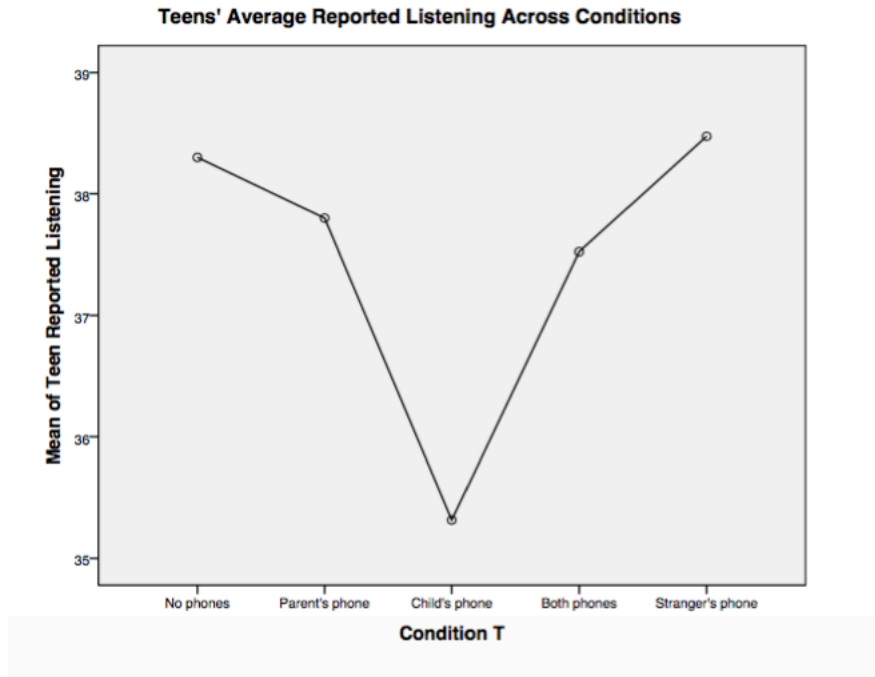
However, results from a One-Way ANOVA indicate that differences between conditions are not significant ($F(4, 95) = .65$, $p = .63$). Including co-variables (reported quality and closeness in the past week) into the model, the most interesting shift occurs during the Child's Phone ($M = 36.39$, $SD = 6.92$) and Both Phone's ($M = 36.57$, $SD = 4.62$) conditions as they converge for reported experiences of listening:



However, results from a One-Way ANOVA reveal that differences between conditions are not significant ($F(4, 87) = .79, p = .54$), suggesting that the mere presence or absence of a mobile phone(s) has little effect on parents' experiences of children's listening.

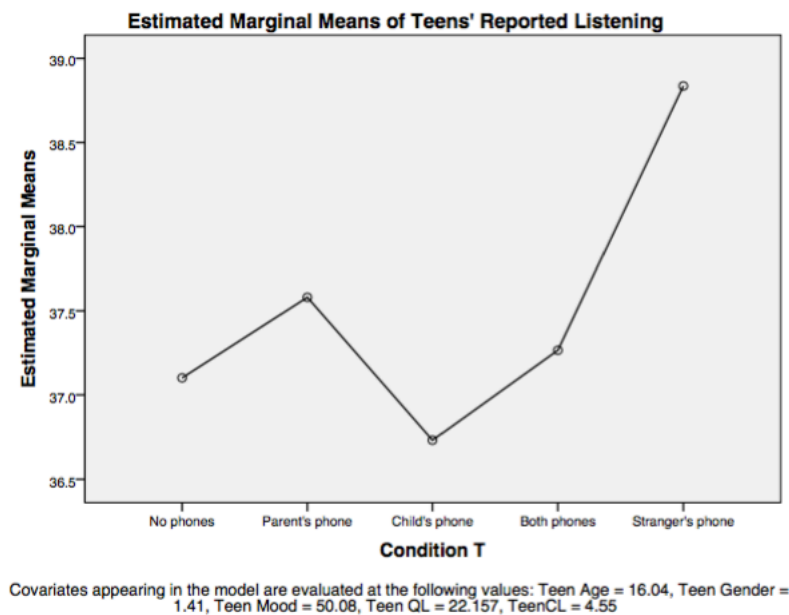
Teens

Looking at teens alone, we see an interesting replication of parents' reported listening during the Child's Phone ($M = 35.32, SD = 7.69$) condition, indicating that when the child's phone is present, children reported the lowest listening from their parents when only the child's phone is present:



However, results from a One-Way ANOVA indicate that differences between conditions are not significant ($F(4, 94) = .97, p = .43$), indicating that mobile phone(s) mere presence or absence does not have a significant influence on teens' experiences of listening during the conversation.

Including co-variates (age, gender, mood before, reported quality, and closeness in the past week) into the model, we see a shift in reported experiences of listening across Parent-Child Phone conditions and the No Phones condition:



However, differences between conditions remain non-significant ($F(4, 89) = .71, p = .59$), further indicating that the mere presence or absence of mobile phone(s) has little impact on teens' reported experiences of listening.

Phubbing and dependency between parents and teens

Parents' and teens' reported phubbing ($p = .000$) and dependency scores ($.007$) were both found to be significantly different with a Mann-Whitney U non-parametric test of significance. Parents ($M = 38.68, SD = 12.13$) report higher experiences of phubbing than children report of their parents ($M = 28.56, SD = 6.52$) and parents report lower dependency ($M = 14.33, SD = 6.52$) than their children ($M = 16.78, SD = 5.16$). However, we witnessed little effects of mobile phone mere presence during parent-teen interactions that was not influenced by baseline reported values of general relationship quality and closeness. These findings should also be interpreted in the context of parent-teen interview

results. In particular, how parents' and teens' concerns of technology use could be reflective in reported dependency scores versus adequately measuring dependency. In addition, in Chapter 5 I will explore how family politics of power could influence differences in parent and teens' reported phubbing experiences.

Summary of Quantitative Insights

Overall, minimal evidence was found to support a negative impact from the mere presence or absence of mobile phones on parents and teens reported experiences of meaningful interactions. That said, the mere presence of mobile phones appears to have more of an effect on parents than teens in reference to experiences of conversational closeness. When mobile phone presence passes a threshold of both parents' and teens' phones being present, there is moderate evidence to suggest that parents' experience less closeness in the presence of both devices. Reported conversational effects were also found, in some cases, to switch directionality when accounting for general relationship quality and closeness, indicating that baseline relationship status can have a strong impact on day-to-day experiences and interpretations within a laboratory setting. Therefore, collecting such baseline measurements is imperative when analyzing in-the-moment reported experiences for future work and while interpretation findings of previous mobile phone studies without the inclusion of such baseline measurements.

Qualitative Insights and Discussion of Findings

Findings from the qualitative interviews were important in interpreting final data analysis. The most fundamental contribution from interviews (as previously discussed in the scoring methodology in Chapter 2) was the removal of two questions (“I felt like I wanted a chance to interact with my parent/child more often”, “I felt like my parent/child and I could become closer if we interacted more often”) from the final data set as participants repeatedly reported difficulties interpreting these two questions. An example of why these questions were reported to be difficult is seen in the following parent Bill’s struggle with articulating that he already feels close to his daughter and does not understand if interacting more could make them become closer:

*Yeah, well, I won’t say difficult, but I tend to get really subjective on these type of things so the question, I wanted a chance to interact with my relative more often, or no. I felt I could be closer if we interacted a lot. **So I feel really close to [my daughter] so part of me, I want to say, “Not at all,” because I feel super close to her but on the other hand, I enjoy spending time with her and I feel like, well, there’s – maybe if we spent more time, we could – so I –...So I wasn’t sure on that because it seems a little contradictory. I feel super close to [my daughter] but at the same time it was like, well, OK. So neutral.** – Bill (51), P96*

Bill decided on a neutral value to represent that it could always be possible for two people to become closer.

However, in another example, a teen Dave provides a similar rationale that he feels that he and his mother are already close, but decides instead to report the lowest value for each question to reflect the closeness that he feels:

*The one where if I did something with my mom, would I feel closer. I kind always went with the not so much answer, **not because I don’t want to spend time, but because I feel like I can’t get closer** because we are already as close as we can be. So I don’t think doing any more would make us closer, because **I don’t think we can get any closer than we are.** – Dave (18), T30*

Families who also report spending a lot of their free time together found the two questions difficult to answer as they could not fathom spending more time with their family:

I already spend a lot of time with my sister, like probably almost 100% of the time. So I didn't know if I circled one it would mean that I don't like her, or you know. I can't spend any more time with her because I already do all my time. And this one, I feel like my relative and I could become closer if we interact a lot more. Well we're already really close. So I don't know – I guess I put not at all true because we're really close already. Those are the only two that I had trouble answering. – Jenny (19), T44

The conflicting and confused experiences with these questions were common across participants. Due to the potential confound of these confusions, these two questions were removed from final data analysis. This finding provides support that asking participants to articulate any questions that were difficult to answer provided useful insight into interpretations of data collected. Without conducting these interviews, it is possible that this insight would have gone unnoticed. As a result, including these confusing and conflicting responses could have negatively impacted internal reliability of final data analysis.

Interviews also provided additional context into participant participation, interpretations, and experience of the experiment itself. For example, some participants reflected on their decision to come to the university and which child they chose to bring with them:

*My choice of coming with this daughter, as opposed to my other [child]. My [other child and I, [they] want to spend even less time with dad. That one is not nearly as positive as this one. **That's one reason why when we were setting this thing up I said would you like to do this?** Not knowing what was coming, but I thought we're getting along better than my other one, **because [they're a teenager] and [sighs]**. This one is [older] and has gotten past a lot of that. - Mike (63), P57*

Mike explores how he considered his relationship with his children and how he thought they would each react to spending “time with dad.” Ultimately, choosing the older daughter who he felt would be a better fit due to their current ability to get along more than his younger child. Therefore, there is a potential for selection bias of parents and teens who

were willing to participate together for the study. There is the possibility that the participant pool was weighted toward parents and teens with closer relationships to each other because they were willing to take time to come to the university and participate together. As a result, the parent child pairs in this study could potentially have less issues with technology within their relationships (additional limitations are outlined in Chapter 4 – Limitations).

For additional context, the nature of parent-teen relationships during adolescence was also referenced when reflecting on the experience during the conversation. Several participants reported that it was out of the ordinary to sit with their parent or teen one-on-one and to discuss meaningful topics together. Dorothy explained the communication difficulties that she experiences with her teenage daughter through her reflection:

I was trying hard to have meaningful conversation, which is sometimes hard with a [young teenager]. As you probably listened, I don't know if you heard...She basically thinks nothing meaningful happened in her life in the past year. So I was trying to engage her in that way. Dorothy (44), P86

Thus the unfamiliar nature of laboratory settings should be considered when generalizing findings to day-to-day life. Therefore, the artificial nature of the laboratory setting could result in deviations to parent-teen behaviors and attitudes about the experience of mobile phones (outline further in Limitations).

However, even if sitting together one-on-one was out of the ordinary for some, the quality of the interaction experience was reported to be positive for nearly all participants. In debrief interviews, parents and teens reported being really engaged with one another as a reason for not noticing the phone(s) during their conversation:

A: [I didn't notice the phone] Q: Why do you think you didn't notice it? A: I think we were having a good talk, you know? Good conversation. And we were really engrossed into, what are we going to talk about? Tracey (40), P5

The majority of participants reported being capable of ignoring the phone(s) and focusing on each other. This suggests that parents and teens believe that they are able to have quality interactions in the presence of devices.

When participants reflected on the positive experience that they had discussing the most meaningful events of the past year with their parent or child, participants often reported that this positive experience influenced both parent and teen to decide that devices were secondary to their conversation together:

I felt like we were in a moment. It was just both of us talking about stuff and we forgot about everything. We were just focused on paying attention to each other and what each of us had to say. – Mary (14), T81

Focused attention was reported as accessible in the presence of devices and feeling capable of ignoring the presence of a phone(s) was associated with being in the “moment”.

Therefore, parents and teens feel capable of being able to ignore devices when the situation calls for focused attention and quantitative results support this finding.

For other participants, family interactions were not reported to be influenced by the presence of devices outside of the experimental setting:

I didn't really think about it. Because when me and my mom have our talks and we hang out, I don't really think about it. It's either in my room or it's somewhere I don't know. And I usually don't think about it. But out with friends it usually comes up or I'm usually checking it. It just seems like our conversations aren't that big as a deal to me as they are when I'm with my mom. – Andrea (15), T72

In these families, the presence of devices was described as normalized. It is a daily part of life. The normalization of mobile phones in parent-teen interactions could be a reason for the lack of reported parent-teen mobile phone effects that were found in prior work with two adults.

Lastly, some participants engaged in an emotional conversation as they reflected on monumental moments throughout the past year for their family. A few participants were moved to tears during the 10-minute interaction. Of these participants, parents and teens reported that they were grateful to have had the opportunity to sit down and to have such a meaningful talk with each other, indicating the desire for such quality time but the lack of understanding of how to implement such times with busy schedules:

*A little sensitive when me and her have 10 minutes to talk...because **sometimes you don't have time to say what you feel if not a special moment** because it just happened... **I think I was really deep in the conversation and I want to hear what she [felt].** – Rebecca (47), P81*

These data indicate that setting aside “special” times to discuss meaningful topics could be beneficial to parent and teen relationships to avoid getting caught up in the fast-paced nature of daily family life and to avoid missing out on these types of reportedly beneficial interactions.

To summarize why the presence of the device(s) during the interaction did not appear to have an influence on dependent variables of quality, closeness, and listening during the conversation, two main reasons were reported: (1) devices were described as being so deeply engrained into family’s lives that the phone presence felt natural:

***That’s normal. We leave our cell phones out all the time.** I don’t remember, I took mine out, but I normally do, just because it’s not comfortable in my pants pocket. – Harold (46), P10*

And, (2) the experimental nature of the study encouraged parents and teens to not pay attention to the device as participants recognized they were being monitored and were in a controlled setting:

*A: **[I didn’t think about it]** Q: Why do you think you didn’t really think about it? A: Um, **I think probably because there was an instruction to interact. I think I we were***

just sitting there alone in the room without any sort of instruction, she probably would have been fooling with it. – Emily (59), P82

Other participants reflected on the design of the study as the reason why they did not notice the phone during the conversation:

*When you were in the room talking to your son, did you notice your phone on the table? A: No. Q: Why do you think you didn't notice it? A: Just **because I knew that we were supposed to be having a conversation, I just was waiting for a buzz.*** – Josephine (46), P87

Therefore, the presence of authoritative research scientists and university laboratory instructions to interact could have reduced sensitivity toward the devices as participants were following orders to interact. The pressure to have a conversation could have suspended day-to-day feelings and behaviors toward the device(s).

In reference to daily experiences with devices, the following parent laments the differences between the experimental conversation and the conversation she normally has with her daughter:

I didn't even think of the cell phone, and I was thinking we were just sitting there and she didn't have that damn thing with her... normally if I'm talking to her, she's got that damn thing in her hands. And I was like oh my god, she didn't – and I think because we're in here, she knows I can't use it or whatever. But if we're outside, she's glued to that thing. – Nancy (48), P72

Nancy and her daughter were randomly assigned to the No Phone condition. It was not until reflecting back on the conversation that Nancy realized that she had just had a conversation with her daughter without the presence of devices. Therefore, the absence of the phone could have less influence on parent-teen conversational experiences than prior studies suggest because of the close nature of parent-teen relationships which could reduce the impact of external factors.

In reference to daily reported behaviors and behaviors in study, the following teen reflects on how she feels that she altered her behavior during the experimental setting:

I think just because the intention was the have the conversation, that nothing else really mattered. It vibrated a few times, like notifications were coming in, and normally if I'm alone with her, I'll disregard that conversation, go look at my phone. But since it was kind of like a controlled conversation, the notifications could wait kind of thing. – Alice (18), T18

When Alice reflects on why she didn't interact with her phone or allocate her direct attention to the device, despite the notifications that she heard coming in, she rationalizes that the controlled setting subtly reminded her not to check her phone during the conversation. However, in daily family life, she reports shifting her attention during conversations. The impact of feeling that “nothing else really mattered” during the experimental conversation suggests that conversations at home could be implemented with reduced mobile phone effects if similar focused conversation settings were established.

Device ubiquity was also a rationale for why it could have been *more distracting* if the device(s) were *not* present for participants than when they were:

That it didn't seem strange? Because it's always present. It's like it's become a part of me, like who I am. So it's something I expect to be there all the time... I don't know. It's just a sense of, I guess – it's like something would be missing. A sense of security. Like if somebody needed to contact me. – Chelsea (43), P93

Therefore, these data suggest that anxiety could be increased by the removal of the phone.

However, for those who were instructed to leave their phones in the other room, the vast majority reported that it did not affect their attention during the conversation or increase anxiety:

Q: And how was it to leave your phone in the other room when you had the conversation? A: Not bad. I didn't think about it. – Cynthia (18), T19

That said, some participants reflected that they might have been distracted if the phone was present but still found that not having the phone was worrisome in case of emergencies. Therefore, the presence of the phone can serve as a comfort that no emergencies will be missed:

I thought it was good so it wouldn't distract me from what we're doing so I could stay focused. But then I worried what if someone texted me or something or it's an emergency, like a family emergency like that. - Helen (14), T81

The importance of the phone for emergencies even surprised some participants that they were not thinking about the device during the interaction. This realization resulted in expressions of guilt for some that they were capable of placing the phone out of their mind for 10-minutes:

*How was it for you to leave your phone in the other room during the conversation that you had with your daughter? A: Fine. It shouldn't be, because my [other child is] at home. [laughs] Q: And when you said it shouldn't be, why is that? A: Because **if he had an emergency and [they] needed to call me. I didn't think about it when I left my phone there.*** – Patti (46), P22

The pressure for parents to constantly be connected and available to their children in case of emergencies was a common theme throughout interviews. As a consequence of this pressure, the ways in which parents relate to their device might have an impact even when their children are physically present as parents could associate device presence with increased feelings of safety.

Even with phone as a potential distraction during the conversation, participants still described the presence as the phone as not being bothersome:

*Q: Why did you notice it? What made you notice it? A: Because **her cell phone is always on the table and I'm always aware of it, and it's a frequent point of contention between us.** And because it buzzed, too. Three times. Q: What went through your mind when you noticed it? A: I knew that the buzzing was from you, so it seemed like it was appropriate. **I appreciated that she was able to be interrupted and continue to focus.*** – Suzanne (61), P18

Suzanne and her daughter were in the Child's Phone condition, which could have resulted in strong negative feelings from the parent due to the "frequent point of contention"s that they experience within the family around device usage. However, Suzanne still described a positive experience with her daughter due to her interpretation that her daughter was still able to focus on their conversation, despite the presence of her daughter's contentious device.

Limitations

Limitations of the study design are outlined below. First, is the laboratory nature of the study. Experimental design cannot capture in-situ behavior. Research design also involved requesting parents and teens to have a conversation together, which could have influenced both parents and teens to ignore external factors (e.g., phone presence) in an effort to follow instructions. Therefore, the desire to focus on the conversation could have encouraged parents and teens to ignore the phones in the research setting whereas they might not be as successful at ignoring phones in everyday interactions.

Second, the conversation topic, "please discuss the most meaningful events of the past year," was chosen to replicate previous works. However, this particular conversation topic could have resulted in a ceiling effect for parents and teens for whom such a conversation is both rare and emotionally loaded. However, this research provides into the effects of the mere presence or absence of mobile phones during meaningful interactions between parents and teens.

Third, although our research sample was diverse, the study design required a parent and teen to be willing to come to the university together and to engage in a parent-teen

activity for 90 minutes. This requirement could have resulted in having parents and teens with more positive relationships participating in the study; however, we did have a few outliers that did not fit this pattern. It is difficult to test the reliability of these assumptions as we were only capable of studying parents and teens who were willing to come to the university.

Fourth, it is possible that the mere presence of mobile phones during the experiment had little effect on parent-teen interactions due to the reported normalization of mobile phones in everyday family life. However, it is unknown if the lack of significant effects associated with mere presence or absence would transfer to experiences of mobile phones within the home during day-to-day interactions. In addition, as prior laboratory studies examined the effects of mere presence of mobile phones between two adult strangers, it is possible that mobile phone normalization described within families can explain the difference in our findings to prior work.

Fifth, while we witnessed minimal effects of mere presence of mobile phones on interpretations of meaningful interactions, I explore descriptions of family conflict around mobile phones gained from interview data in the next Chapter: Interpersonal Parent-Teen Conflict and Mobile Phones.

Summary of qualitative insights

Qualitative interviews suggest that mobile phone presence is often normalized within parent-teen relationships. In addition, parents and teens felt pressure to focus on the conversation and not on the presence or absence of mobile phones due to the laboratory setting of the experiment. Although quantitative results of the mere presence or

absence of mobile phones were not replicated from prior studies, qualitative insights of mobile phone conflict located in the next chapter (Chapter 5) indicate that the mere presence or absence of mobile phones *could* have an effect in day-to-day family interactions. Therefore, while there is little evidence to support a negative impact of mobile phones during parent-teen meaningful conversations, reported mobile phone parent-teen conflict indicates that mobile phone conflict interventions could be beneficial to improving parent-teen mobile phone dynamics in the home (discussed further in Chapter 5 and 6).

CHAPTER 5: Interpersonal Parent-Teen Conflict and Mobile Phones

To better understand how parents and teens make sense of mobile phone conflict within the home I analyzed over 100 post-experimental hours of interview transcriptions. Mobile phone conflict was originally coded as any mobile phone frustrations, arguments, tensions, and irritations described within parent-teen relationships. In a second round of iterative coding and memoing, codes for mobile phone conflict were re-coded to assess conflict origin and processes (see Appendix D, Interview Codebook). Through this re-coding, underlying processes and conflict origins were grouped into separate stages of mobile phone conflict in order to induce a model of parent-teen conflict that could be used to understand future possibilities for mobile phone conflict mediation. I then reviewed several existing models of parent-adolescent conflict in an attempt to further understand experience of conflict within parent-teen relationships and found that the construct of “behavioral opposition” (Laursen & Collins, 1994) aligned with these data.

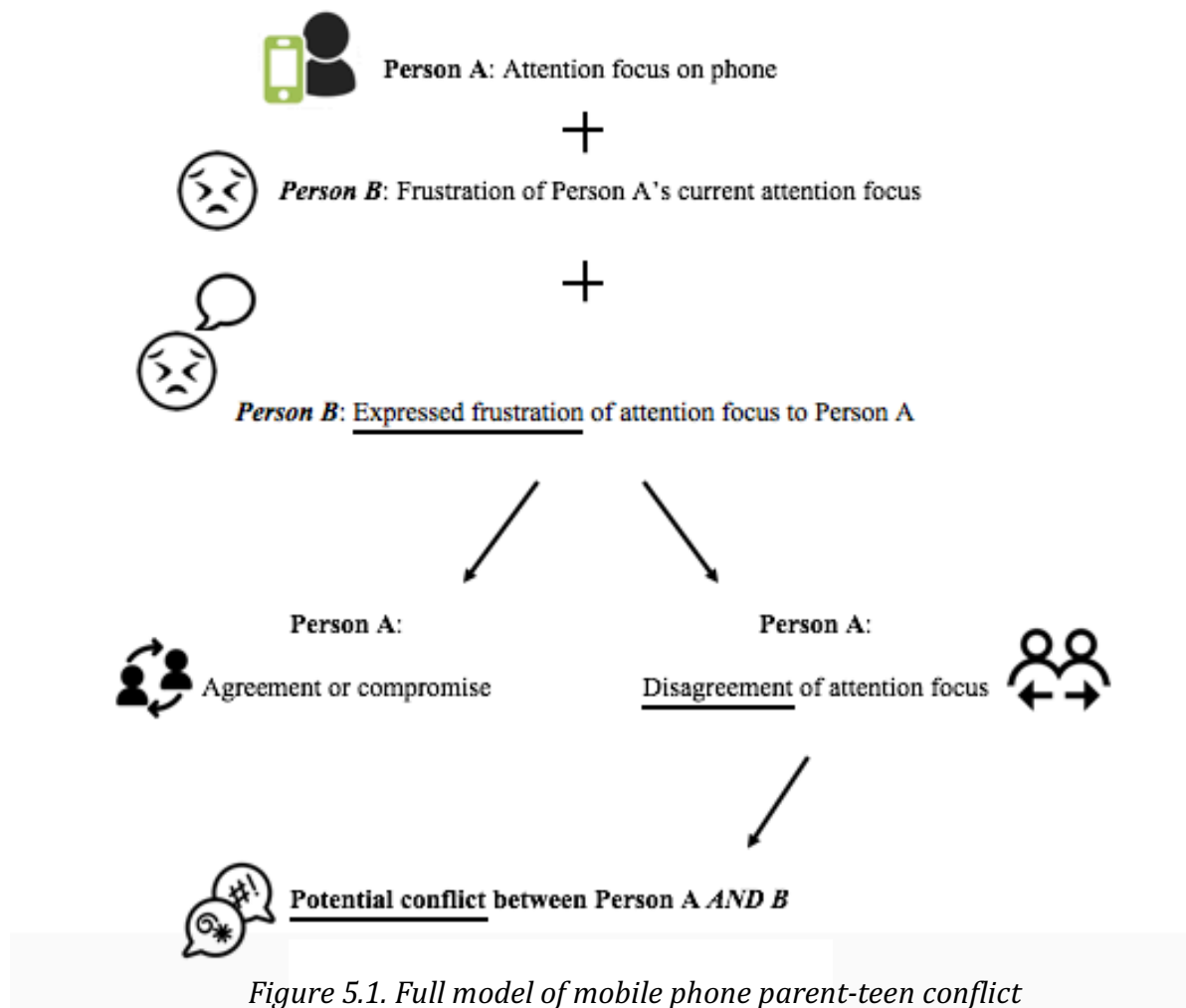
As such, mobile phone “conflict” was defined using the “behavioral opposition” conflict model developed to assess the presence of conflict within parent-adolescent relationships (Laursen & Collins, 1994). Within this framework, conflict is expected to arise when a behavioral opposition occurs between a parent and teen. Behavioral opposition requires the presence of two actors, A and B, where Actor A does not agree or engage with the behavioral requests or demands of Actor B. Parents and teens can therefore alternate between acting as Actor A or Actor B, according to the circumstances of conflict (e.g., a teen could be Actor B if they have requested their parent to put phones away during dinner versus a parent acting as Actor B if they made the same request to put phones away during dinner).

Family conflict that centered around phone use came up regularly in interviews. Some degree of mobile phone related conflict was described in 70.35% of families. Sources of conflict ranged across numerous behavioral opposition reasons – e.g., insisting on using the phone during dinner time, being on the phone in place of going to sleep on time, texting instead of focusing on driving, going over data plan limits, sending inappropriate messages, etc. On the surface, these conflicts could be viewed as unique and/or unrelated. For example, how could using the phone during dinner be connected to texting and driving? However, by synthesizing the various described origins of conflict it became clear that current attention focus is the underlying impetus of parent-teen conflict related to mobile phone use. Thus, conflict was described as arising when a parent and teen disagreed about where attention should be focused at a particular moment in time. As such, there is not a list of specific mobile phone behaviors that invariably lead to conflict, rather *any behavior* can lead to conflict if there are disagreements around situated focuses of attention. In other words, if Actor B feels that Actor A's focus of attention is not desirable *right now*, and Actor A *behaviorally opposes* to listening to Actor B in the moment, then conflict can escalate.

Using a behavioral opposition framework in the remainder of this chapter, I present an inductive model of conflict that outlines the source and responses to conflict around parent-teen mobile phone use. This model builds upon existing models of parent-teen conflict (e.g., in particular, behavioral opposition) by outlining explicitly how mobile phones can become central devices around which family conflict can originate and occur. As outlined in Chapter 3, mobile phone use and concerns are salient topics in mainstream media. The decision to focus on mobile phones as a potential source of conflict and/or source of interpersonal issues for parents and teens reflects the varying internalizations of

such mobile phone concerns and explores how such concerns are described in family conflict (Chapter 3). The model presented in this chapter provides a guide for both parents and teens to understand how parent-teen conflict occurs in reference to *mobile phone* family behavioral oppositions. This distinction expands on existing behavioral opposition models of parent-teen conflict to highlight how mobile phone origins and processes of conflict are described for parents and teens.

In Stage 1 of the model, I discuss how attention emerged as the major source of mobile phone parent-teen conflict (Stage 1: Experience of Frustration). In Stage 2-4, I outline the reported behavioral opposition elements and processes leading to conflict (Stage 2: Expressed Frustrations, Stage 3: Agreement or Disagreement, Stage 4: Experience of Conflict). The key components of each stage are represented visually and depict a model of parent-teen mobile phone conflict (Figure 5.1):



This model is used to explore how and why mobile phone conflict can arise within families. Using insights arrived at in this model, I conclude the chapter by outlining potential ways to mitigate family mobile phone conflict. In particular, I discuss how this model could be used in future designs of mobile phone family conflict interventions.

Stage One: Experience of Frustration

Although interview data does not lend itself to complete theorizing processes, from post-experimental interview data we can begin to theorize about how conflict arises for

parents and teens. Translating the behavioral oppositional model to these data, we can see how the possibility for mobile phone conflict can be ignited when Person A's current mobile phone attention differs from Person B's in-the-moment interpretation of where Person A's attention should lie. Stage One of Mobile Phone Parent-Teen Conflict is represented below:

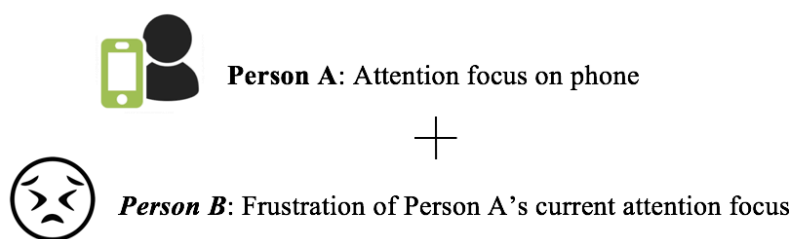


Figure 5.2. Stage one of mobile phone parent-teen conflict

The motivation for mobile phone attentional frustration can be broken down and separated into two major categories. Person B can become attentionally frustrated when Person A's current attention focus is on the phone instead of: 1) a preferred conversation partner OR 2) a preferred other activity. If Person B currently desires more focused attention and interaction with Person A, and believes that focused interaction can only occur without the presence of mobile phones, Person B can become frustrated when Person A splits his/her attention with the phone. Alternatively, Person B can currently desire that Person A engages with another activity outside of interpersonal interactions if they believe that another activity is more beneficial (e.g., reading a book) or required (e.g., doing chores) than focusing attention on the phone. In teasing apart these two distinct frustrations for Person B it becomes clear that understanding source of frustration is important in designing future interventions for mobile phone conflict.

Frustration 1: Demand for conversation partner attention

The presence of Person A's phone can result in Person B feeling ignored if Person B does not feel that Person A's attempt to split attention is successful. This becomes increasingly problematic as both parents and teens believe in their ability to multitask. For example, the following parent Nancy is acutely aware of how frustrated she feels when her daughter attempts to split attention between listening to Nancy and being on the phone:

*It frustrates the crap out of me. I'm like. **put your phone down, you're talking to me, have a conversation. My eyes are up here. She'll be like, I didn't hear you. And I'm like, yeah, because you're – put the phone away.** It gets frustrating. she does that or the TV too, is the biggest, where I'm like I'll shut them off. I'm talking to you. - Nancy, (48), P72*

When Nancy reflects on her daughter's phone use, she recalls multiple moments when she was not able to receive the attention from her daughter that she desired. Seeing her daughter looking down at the phone, coupled with her daughter saying that she did not hear her, reinforces the feeling that her daughter is not capable of providing Nancy with the level of attention that she desires while using the phone. Nancy's experience of her daughter not "hearing" her while on the phone also extends to when her daughter is watching TV, another device that consumes attention. This sense of frustration leads Nancy to demand visual cues (e.g., looking into her eyes, putting the phone down, shutting the TV off) of focused attention to communicate that her daughter is fully listening to her.

Nancy expresses frustration that her daughter does not acknowledge or reference her device to account for why she might not have heard her mother. Her daughter's lack of recognition that the device is capturing her attention further frustrates Nancy as she feels that the phone *is* the reason that her daughter cannot "hear" her. Given this history, the

mere presence of the device can serve as a symbol of split attention and lack of listening for Nancy. The built up negative association to the daughter's phone presence has become a source of conflict for this parent-child dyad. Nancy feels she has to take an all or nothing approach to device usage in order to receive what she considers to be basic attention and respect from her daughter. Under this assumption, if the device is shut off, Nancy's daughter will listen to her.

However, Nancy does not consider in this assumption how much of her daughter's attention might be even more devoted to the device if Nancy required her daughter to shut the device off. If Nancy decides when her daughter should be able to put the phone down and to listen, this decision does not account for the delicate nature of attention when interrupting someone (Tams et al., 2015). It is possible that Nancy requests her daughter to put the phone down during a moment when her daughter is heavily engaged with the phone. If her daughter agrees to put the phone down, even if she attempts to pay full attention to Nancy, her unfished engagement with the phone could still hold her attention in a way that makes fully listening extremely difficult. The ability to immediately shift attention on demand is not as easy as believed by the one demanding such an attentional shift.

From her daughter Andrea's perspective, it is not so easy to just put the phone down. She reflects that the small size of the phone should enable her to put it aside. However, the pressure she feels to constantly maintain interpersonal relationships through the phone undermines her ability to ignore the device. Andrea worries that she will be interpreted as rude if she does not respond immediately to friends and the incoming texts she receives provide her with joy:

Not being on it [is challenging], that's about it. Just not looking at it, not using it. I mean it is difficult, but at the same time it's easy because it's not that big. But it is hard when you're looking forward to a text and you don't want to be rude and go look at it. But you still do, and it's a problem I need to fix... There's some fights around me using my phone, but usually they just end up with like, c'mon, don't use it. It's usually as simple as that. It's a fight like don't use it, c'mon now. And I'll be like, well I'm using it for school, but I'm really not. And I know that. And she'll be like I know you want to use it, I get that you're a kid and everything, but you have to do your homework. And I'll be like, yeah, I get it, okay. And I go do it. - Andrea (15), T72

Although Andrea looks forward to her texts and enjoys the friendships that she is able to maintain through the device, she expresses guilt over being unable to put the phone down and believes that it is a problem she needs to “fix.” Yet, she does not want to abandon the social relationship that ties her to the device. Nancy’s assumption that her daughter could and should immediately abandon interactions happening on the device, suggests that she does not fully comprehend the pressures her daughter is under. Andrea worries about what she is missing and what horrible things her friends might be thinking about her if she does not respond immediately to incoming messages. Instead of demanding that her daughter immediately put the device down without warning, Nancy could be helping her daughter manage the anxiety of managing asynchronous relationships and sharing empathy for these anxieties.

Recalling a mobile phone induced fight, Andrea describes her mother’s injunction to not to use the phone: “C’mom, don’t use it. It’s usually as simple as that.” This black-and-white interpretation of how to engage in phone non-use, does not resonate with Andrea’s experience of not being able to put down the phone. Andrea is left attempting to get her mother to accept her difficulty in separating from her device. Andrea often uses homework as an excuse to use her device, because her mother sees homework as an unambiguous “good” reason to be the phone. By providing this excuse, Andrea is able to navigate and

provide justifiable reasoning to Nancy and to herself when she is in a situation where she feels the need to use the phone (e.g., “looking forward to a text”). This slight deception does not mitigate the guilt and pressure she feels to put the phone down.

Alternatively, when Andrea reflects on other moments when her mother provided empathetic reasoning around mobile phone use, she describes understanding her mother’s logic and agreeing to do her homework without the device present. When Andrea describes feeling that Nancy actually understands how much Andrea wants to use the phone, acknowledging that it is “normal” for kids to spend a lot of time on their devices, Andrea seems more likely to accept her mother’s restrictions. She agrees that homework is still important regardless of her desire to use the device. Being heard is an important factor in motivating attempts at behavior change. I will further explore the role of empathy in the escalation and de-escalation of conflict in Stage 1, section “Factors Contributing to the Escalation of Conflict.”

In addition, the belief that someone can simply go in and out of using their device on command is clouded by an insufficient understanding of what someone might be doing on the device at any one point in time. The endless opportunities for mobile phone engagement (e.g., passively scrolling through social media versus answering a time-sensitive important text or email) cannot be distinguished by an external visual cue. Phone use enables users to switch between activities interpreted as trivial and non-trivial almost instantly without providing outward visual cues of these shifts. When a parent assures that every time they see their child on the phone they are engaging in a trivial activity (that can be paused and resumed at any time), frustration can arise. For example, the following

parent Sharon admits that she does not know what her daughter Angela is doing on her phone in the car, but strongly insists that Angela should be able to just do “it” later:

*[I would like my daughter to use the phone] less. Yeah, like **maybe when we're in the car talking, I think she can just put it away and not have to look at it every so often. I don't even know what she's checking. Maybe she's checking what everyone else is up to. She can just do it later when I'm not looking so it's not offending me. It is offensive, right? It's almost rude. It's like when you're talking to someone and they're doing something else.** - Sharon (36), P35*

The level of offense Sharon feels is strengthened by her belief that it should be easy for her daughter to make the thoughtful decision to go on the device at a later time. If Sharon knew what her daughter was doing on the phone, her assumption that her daughter could just do it later might shift. When Sharon reflects on what Angela might be doing, the idea that Angela would use the time in the car to check up on other people bothers her. The activity of checking up on others is not valued as time-sensitive to Sharon and therefore is not believed to justify being “almost rude” to her.

One interesting detail in Sharon’s description is that she assumes her daughter knows she is trying to have focused conversations while driving. Without more data we cannot know whether this desire is explicitly communicated, but her daughter describes being unaware of when Sharon would like to have focused conversations. It could be that during moments of silence, Angela turns towards the device because she interprets time in the car as “down time.” Such behavior is then coded as problematic as Sharon believes her daughter no longer wants to engage fully in conversation. Angela may assume desire to re-engage in the conversation, but she is simultaneously navigating the two channels of communication. Sharon’s offense during these situations implies intent. She believes that her daughter knows her mother would like her full attention in the car and is capable of navigating when to put the device down.

Inspired by observations of her father's use patterns, Angela's description of what is appropriate in the car deviates substantially from her mother's. Angela describes that her father is often focused on talking on the phone in front of family rather than glancing at the device in silent engagement:

*Sometimes because **my dad, since he uses it a lot for work, sometimes he uses it in the car...** Even then we're like, "**Dad, can you just please put it away when somebody [calls]?"** But yeah, I think that'd be the only problem. **Or when we want to talk to him, he's on his phone and he's not really paying attention to us.** I think that's one of the problems that we have sometimes. - Angela (14), T35*

If a father is using his phone in the car, even when his children beg him to put it away, car phone use within the family can become normalized. This can become problematic for the mother/wife/partner who does not support the normalization of this behavior. The discord between what Sharon views as inappropriate phone use in the car and her children's experience of normalized phone use in the car encourages a behavioral opposition and disagreement of what is acceptable phone use. Split attention while attempting to gain a family member's attention is also normalized for Angela and her father, as both daughter and father experience a lack of full attention in the presence of respective devices. Thereby split attention furthers the opportunity for attentional disagreements to arise within the family.

Demands for Attention from Teens' Point-of-View

Where parents have the authority and the power to demand attention from their children, children often do not feel that they can express similar frustrations. Take Angela's experiences with her father above. Although children often report keeping their feelings to themselves, it does not mean that they do not experience frustration and hurt associated

with phones and split attention. We can see the following teen Denise struggle with her father's phone usage, but hesitate to express her frustrated feelings:

I guess [I would like my dad to] just to put it aside every once in a while, so it's not a constant presence. Because it can get kind of annoying when you're trying to talk to someone and they're distracted by notifications or they're getting a call...It's kind of frustrating, because you want the person that you're talking to be paying attention to you. So when they get distracted, it's kind of like frustrating because it's a bit rude to, like you're in the middle of a conversation and they just ignore you. That's how I feel about that...Usually [I won't say anything in those situations], because I know it's most likely something that's important. So I can see why he does it, but it's still frustrating to me. - Denise (16), T55

The lack of attention she experiences makes her feel ignored, frustrated, and annoyed. But her rationalization that her father is "likely [doing] something that's important" discourages her from speaking up. The pressure she feels to keep these feelings inside, can lead to internal strife that is not expressed. In these cases, the progression of conflict is halted at Stage 1 (Experience of Frustration) and is translated into internal conflict rather than progressing on to interpersonal conflict. Even though Denise tries to justify and to empathize with her father's use, she cannot shake how frustrating it feels. Her lack of expressed frustration increases the feelings of internal conflict that she experiences over time but does not materialize into interpersonal conflict at the moment.

Numerous teens expressed that they have little authority to change their parents' usage behaviors. However, those that did recount an ability to express frustration also described faith in their own ability to use the phone constructively. Therefore, if children believe that they are using the phone appropriately they feel justified in speaking up and perhaps even chastising their parents. Teenager Stacey described how after reducing her personal phone usage, she gained the confidence to tell her father Bill to use his phone less:

I think I might have told my dad because he actually goes on – I actually get mad at him because I'm like, "You go on your phone more than I do," sometimes when

*we're just sitting and watching TV. So yeah, actually I did tell him....**I think he goes on his phone a lot, actually and I don't think he realizes that he's on it so much. But if we're out at dinner – I know he's not doing it on purpose, but there'll just be a lull in the conversation and he'll pull out his phone. He'll just be on it for so long and [I'll say], "Dad, you need to get off your phone." And he gets off of it. [He doesn't say], "Oh, I need to be on my phone." But I think just whenever he's bored, he's on his phone.** - Stacey (19) T96*

The ability to say “you go on your phone more than I do”, is framed as a source of immunity; a way to gain power in a relationship dynamic where power and authority is not naturally present. In the instances where she will say something, she reports that her father normally listens and will put the phone away. However, she believes that his overall behavior is not altered by her repeated requests. But she does appreciate when he responds to her requests and puts the phone away when they are together. The two avoid conflict because Stacey remains understanding and empathic of her father's use and believes that he does not use his phone “on purpose.” This explanatory interpretation of his phone behavior reframes her frustrations from what others might perceive as “rude” and unacceptable phone behavior, to accidental use and caring about her father's wellbeing. Therefore, she is able to often halt conflict at Stage 1 (Experience of Frustration) as she internally transforms her interpretations of what is frustrating to her and thereby reduces her feelings of frustration. In other moments when she does express frustration (Stage 2), conflict is also avoided at Stage 3 (Agreement or Disagreement) when her father Bill agrees with her requests and alters his behavior.

Reframing interpretations of use is not an easy task, especially when split attention during a conversation is not only viewed as rude, but also interpreted as undervaluing a conversation partner. Bill struggles with his own interpretations of other's phone use:

*I hate when people – if **right now we were having a conversation and the phone rang and you took the call, that's offensive to me. I just feel like you value this***

anonymous call more than me. And it actually really bugs me...if you're in the car and someone's on the phone, like my wife is talking to [one of her relatives] or something and it's like, "Really? Can you do that later?" It's annoying and it's not – if you didn't ask me about it, I wouldn't be sitting here going, "You know what one of the problems I have in my life is cell phone use. - Bill (51), P96

Again, we see the same idea that someone could simply use the phone later. The decision to use the phone is viewed as an active one. If someone actively chooses to answer or to use the phone in one's presence, then that person must value going on their phone more than speaking to their current conversation partner. While this interpretation appears to lend itself to consistent distress, Bill does not view phone use as a large problem in his life. He views these perceived active choices to be annoying and irritating when asked, but the irritation he feels on a daily basis is not strong enough to warrant large conflicts. This could relate back to Bill's own behavior described by his daughter of using his phone during conversations. In everyday interactions, if Bill also engages in the same phone behavior that he finds offensive, he could feel less justified in vocalizing his frustrations when other people use a phone during conversations.

There are also generational and in-group differences across what is considered rude mobile phone behavior. Not being able to understand these often unspoken and complex values can result in escalated conflict if a parent cannot grasp what is or is not perceived as rude by their teenager:

*I never use [social media]. Don't really know that much about it, but they use it all the time. They send pictures no matter where they are to their friends, and they are constantly interacting with their friends. **The amazing thing is they can be, I've taken my daughter and their friends in the car, and all of them will be on their cell phones... Even when they're together.** And I've mentioned it to both of my [children]. **You're with your [family] or you're with your friends now, they're sitting next to you. Talk to them. Put your phones away,** and –...I don't know [how they see it], **it doesn't make sense to me.** Sometimes I see [kids with] their own friends, if we're [out to eat]...all the [kids] at the table will be on it, and they'll be texting each other. **It's like well you're right there.** - Mike (63), P57*

The parent Mike admits that his child's phone use within their peer group does not "make sense" to him. The more that the behavior does not make sense to him, the more bothersome and frustrating it can become. However, for his teenager Sandy, there are unspoken understandings of what is appropriate versus rude with her family versus with her friends:

It's not really spoken but we know its rude to have it at the table when we're eating. It's like okay, don't do that. But a lot of the times we'll eat [while watching TV]. So if we're watching something while we're eating then I can be on it, because it's not solely focused on someone else. But if we're eating at the table, if we have friends over, then it's like leave your phone in your room. Don't be rude. So we do something like that. But then if the friend comes into my room, then we can both be on our phones and talk and stuff. So it's not really like when we're not doing anything else that we can't really be on it. - Sandy (19), T57

Through an awareness of those around her, Sandy has developed a system of understanding what is appropriate, with whom, and when. She is articulate about how she alters her behavior based on the social context and ways in which those around her are engaging with their own technologies. Social context influences how she interacts with her phone according to the social rules that she believes to exist at a particular moment in time. The navigation of social rules also extends across both of her parents:

I think it differs between when I'm with my dad and when I'm with my mom. Because my dad doesn't really go on his phone much. He likes to be on [other electronics] more, because [they're] bigger. But with my mom, my mom's [goes on the phone] too, and she's on her phone a lot more so I can be on it at lot more. With my dad, he gets mad when we're on our phones. He's like talk to me. But with my mom we can all be on our phones and still talking at the same time. So like I said it depends on who I'm with at the time, but a lot of the time when I'm with my family we're out somewhere, not necessarily at home, so I can be on my phone as I'm talking to them, but then when we get home I'm not on it all the time, because I like to charge it and leave it. Like I said, if I'm with my mom I'm on it more than if I'm with my dad. - Sandy (19), T57

From her experiences, being on the phone while having a conversation with her mother does not lead to conflict as they have similar attitudes and behaviors with their devices. Sandy believes that her phone behavior is mainly viewed as problematic from her father's point-of-view as he interacts with and values his phone differently than Sandy. This misalignment was reported to result in interpersonal conflict for this dyad as the father continues to not understand or empathize with his daughter's phone use and Sandy continues to disagree with her father's phone beliefs.

Devoted Family Time and Attention

Some families described creative ways that they attempt to keep phones out of family social/quality time together:

It's funny, we have a rule at home, whenever we go out to dinner, no one brings their cell phone to the dinner table. That's just not done...But when we go out to restaurants, with all the [kids], the rule is literally as soon as we sit down, we [all put our phones away]. We all...push them to the side, and no one checks theirs. Nobody touches their phone during dinner...They go away...We'd hear [the phone go off]... [and we joke with him like,] Do you know what they're saying? It could be about you. What if you don't respond...And he's like, mmmm. - Linda (52), P52

For this family, frustrations of split attention are avoided through the practice of putting away all phones during family dinner time. The act of putting away the buzzing phones becomes a center for jokes, not for resentment, as the tradition is clear and predictable. No phones during dinner allows all family members to plan their phone usage, responses, etc. according to a schedule. The focal point of family dinners and desired focused family attention at dinners encouraged all family members to agree upon the rule:

I think we all [came up with the rule]. Because we [enjoy sit down dinners with our family]. That's our big thing...That [is] our time to communicate...A lot of their friends will say, we don't talk at dinner, or we don't laugh at dinner. So that's why if

we're driving, I don't care, look out the window or be on your phone, because that's fine. But at the dinner table, or any meal? Phones away. - Linda (52), P52

The presence of devoted family attention and time also opens the opportunity for the parent to report feeling comfortable when her children are using their devices during other moments when they are physically together. As a consequence of this comfortability, frustrations and potential for conflict are reduced.

In addition, the lack of devoted attention during conversations and family time does not always lead to a reported point of frustration. It can depend, for some family members, what the topic of conversation is about:

I guess it depends on what the conversation's about. For me, I guess if we're just talking about something general, I won't mind too much because maybe it was just a general conversation about school or something like that but if it's something important, I'd be frustrated, and I know that, and I wouldn't like it that much. You know? Because if it's going to be something like let's say maybe I'm talking about, let's say...something for college, something like that, then I would be upset because obviously that's an important topic to talk about. - Carol (17), T16

For family members who believe that conversation topic is influential to experiences of frustration, there is an unspoken desire for a conversation partner to be able to gauge when a conversation is important. From Carol's point-of-view, if a topic is deemed to be important and therefore warrants full attention, split attention on a phone can be frustrating. However, conversations that are thought to be of less importance, do not foster the same level of frustration if attention remains split on a device. Being able to navigate what topics a conversation partner will deem important versus non-important can be difficult as individuals often interpret conversation importance in reference to the importance of the conversation to themselves. This can instigate conflict if two parties are misaligned in agreement of topic importance. For example, while Carol believes having a

“general conversation about school” is not important, her parents might view the conversation topic otherwise.

Whether a current conversation topic is deemed important is also related to simultaneous conversations occurring through the phone. For example, engaging in a very serious and important conversation through text messages could influence how in-person conversation topics are interpreted. If a serious conversation is occurring through text, the remaining attentional resources for in-person communications could be lowered. If attentional resources are re-directed to the in-person conversation, possible conflict with the virtual conversation partner can rise. Split attention can therefore frustrate both the in person communication partner and another virtual communication partner:

*Right. For example, if we were out and my husband's like, “**Why do you keep using the phone?**” I say, “**It's not me because we're having** –” let's say we have a [knitting] group and we have to co-organize certain things so we're just checking to see where we're going to meet, what we're going to do. And then the text will come through so [I turn the sound off but I also] just check and make sure I don't have to respond and then do that. **So I try to keep it at minimum, especially when the family – I don't like to, like when you're sitting with someone and you both are texting. What's the point? So that's not what it is worth. Again, if I need to use it, it's because I have to respond to a person or it has to do with something with one of my kids that I have to respond to them.** - Kathy (52), P16*

Kathy describes being pulled in multiple directions as she tries to please everyone. Her phone use and split attention bothers both her husband (who does not understand why she continues to use the phone while with him) and her friends on the group chat who expect her attention and immediate responses. She tries to keep her use “at [a] minimum] because she agrees that split attention can be hurtful during interpersonal interactions, but she cannot reconcile with the fact that she feels she “needs” to respond to the group.

Splitting attention between the phone and the family does not have to result in internal or interpersonal feelings of frustration and conflict, it can also lead to internal feelings of guilt:

*When [social media] kind of came out, I was on [social media], and it was when my kids were little, **and I realized all of a sudden that I was spending time on [social media], this stupid thing that I didn't really care about and, like, my kids are in the other room. So it made me really sad that I'm missing out on time with them. And that's how I feel like the phone is. Like when we could be having quality time, it's just a distraction.*** - Bonnie (42), P28

For Bonnie, the amount of time she was spending on the phone in the presence of her family crept up on her. It became representative of a personal choice to allocate her attention and time to something that she “didn’t really care about.” This realization is depressing for Bonnie and leads her to describe phones as an object that undermines quality time with her family. Therefore, while Bonnie does not report interpersonal conflict connected with her children complaining about her phone use, she still harbors internal negative feelings associated with her device.

Role of Communication

Internal negative feelings associated with split attention do not always escalate to interpersonal conflict, as those feelings may remain internal. However, these data suggest that communicating frustrations can go a long way to improving family dynamics and can reduce tension or potential for conflict:

We used to have a lot of tensions, because we didn't communicate that we didn't like it, like around the dinner table. Now if it's at home and not at a restaurant, which is weird, we sort of have a policy of no phones unless it's an emergency or it's really serious. So that tension sort of went away with that rule. It helped a lot. - Amy (18), T59

According to Amy, split attention due to phone use was something that bothered several members of the family, but was rarely acknowledge or discussed. Although the frustrations remained internal, tensions arose between family members as they increasingly disliked the experience of split attention during family dinners. Amy recalls that when the family created a policy around reducing phone use at the dinner table, the tensions between family members greatly diminished. Reflecting on when full attention is important and communicating these desires within the family could help family members to ease experiences of frustrations, sadness, and escalated conflict.

These data also suggest that reflecting and communicating about what visual cues of attention during interactions are important to different family members could also help to reduce attentional experiences of frustration. Lastly, practicing and experiencing empathy of device usage was important in transforming experienced frustrations towards more empathic feelings of other's phone use. Feeling heard was also reported to reduce disagreements during conflict escalation, thus further supporting the importance of empathy during mobile phone expressed frustrations.

Frustration 2: Focus on phone instead of a preferred activity

While parents and children both experience feelings of frustration due to lack of attention during interpersonal communications, parents tend to report stronger beliefs and feelings of frustration when attention on the phone is seen to take attention from a preferred activity. Children rarely give opinions of what activities their parents *should* be doing at any given point in time. Parents are viewed as the authority figure and in charge of final decision making. Teens in this study believed that their parents were capable of making decisions for themselves, and therefore tended not to assert judgments about how

parents chose to allocate attention. However, it could be hypothesized that for teens who take on more parental roles in the family (e.g., parents who are gone a lot, etc.), the faith in parental decision making could be decreased which might lead to increases in frustrations for said teens.

Parents however, were often worried about the success and happiness of their children and wanted to do their best to help their children succeed. In service of this goal, parents described pulling from their own life experiences to impart knowledge of their mistakes and successes to their children. However, it is impossible for parents to apply this parenting strategy to mobile phones. The parents in this study had minimal or no exposure with mobile phones in adolescence. With this gap in experience, parents must instead turn to outside sources for trusted advice and guidance and to their own gut instincts for deciding their opinions about appropriate mobile phone practices for their children. Yet, there exists no “right” guidelines for mobile phone use and following outside sources becomes problematic as scientists cannot agree on what constitutes “appropriate” phone use. Gut instinct is also difficult as parents can feel uneasy viewing their children on the device simply because they are uncomfortable not knowing what is appropriate or having any point of reference in their life experience to guide them. Examples of these difficulties are outlined in the preferred activity sections below.

Homework as a preferred activity

For the following parent Teresa, messaging from the high school principal sticks in her mind, even as she sees evidence that her children are able to uphold their responsibilities while having their phone with them:

*It does bother me. I think I still remember [what] my kids' high school principal said...and I still think it's so true. He said, [that kids would get their homework done much faster if they do it without their phones]...**And it is completely true...**It's distracting and it is – they start make one text come followed by another chain followed by – and then it goes into – **it's a never-ending cycle**. But I let the kids know that because it's their responsibility...[so I let them have their phones with them because it's their responsibility and] they do get their homework done and they do have to have friends and have the communication with them. **But I don't think it's necessary to have it with them**. Like I said, **I do believe if they didn't have their cell phones with them, they would get their homework done [faster]**. - Teresa (49), P33*

Even though Teresa reports that she has made the decision to let her children monitor themselves, to reinforce the children's responsibility to get their homework done and to encourage them to develop their own mobile phone use practices, the presence of the phone during homework still bothers her. While reflecting on her children's phone use, she acknowledges that they remain productive, and she notes the value of maintaining friendships through the device, but she still does not reject advice from the principal. The idea of being on the phone and texting back and forth while doing homework remains bothersome. Without the life experience of texting while doing homework during her own adolescence, it is logical that Teresa would turn towards the advice of authority figures in her children's life. This leads Teresa to believe that use of the device is problematic whether or not she has concrete evidence that this is the case.

Teresa's daughter, however, sees herself as being capable of limiting phone use and navigating when it is important to take a break from homework and communicate with others versus not checking notifications and focusing on work:

*[I don't check my notifications] during homework time **because I try to get that done and then contact people** and stuff but if I know it's an emergency or something, I'll respond to the person right away...There are times, like over the **weekends I do tend to use it more because there's no school or anything**. So that, I could be using it a lot on the weekend but during the weekdays, I limit myself. But I do feel like I do*

spend too much time on it and I'd rather just be doing other activities or more productive things. - Beverley (19), T33

She acknowledges that she uses her phone more over the weekends when there are limited straightforward guidelines of productivity (e.g., attending class, completing weekly homework assignments, etc.) but feels guilty for not searching for more “productive” things to do with her time. With the responsibility of navigating her phone use, Beverley has developed her own system for interacting with the phone during homework time. However, within this system, she describes the pressure she feels to respond immediately to messages that she classifies as emergencies. The belief that she needs the phone, in case of any such emergencies, is misaligned with her mother’s belief that the phone is not necessary for her daughter to have while working. Beverley *does* see a necessity for the device, even if it is not directly related to work. Therefore, removing the phone might actually evoke anxiety if Beverley feels unconnected from such potential emergencies. These feelings of anxiety could then influence Beverley’s attention during her homework periods if she feels the need to rush through her homework to reconnect with her phone or becomes distracted worrying about what potential emergencies she might be missing.

The following father Mike also struggles with the sense that his children would get their homework done faster if they were able to just put their phone down:

Well, we've talked about [the phone], like I say you'd get your homework done a lot faster if you weren't on the phone so much. I see it as a big distraction for them. I actually see them taking longer to do things than I think they would if they just put it down, finish it, pick it back up after. I'm not opposed to you having your phone and being on it. What I'm opposed to is it's distracting you from what you're supposed to be doing. That's my take on it. Of course their take is different... I'm asking them about it too, they're giving me input on this too, and I'm asking them about this and that and, it's not that big of a deal Dad. [My kids] are getting, my younger one is getting good grades, so it's Dad, we're getting [good grades]- Mike (63), P57

It is bothersome that the phone might be distracting his children from focusing on their work, but he believes that it is difficult to enforce any restrictions as both children receive good grades in school. His children's high grades also make it difficult for Mike to determine if the phone is a problematic distraction or not. These conflicting feelings are further encouraged by his acknowledgement that he does not think that phone use in itself is detrimental. Yet, there is something about seeing his children taking longer to do activities while using their phones that makes him feel uneasy. He would prefer that his children focus on one thing at a time, something that is familiar to his life experience. However, he acknowledges that his children do not view it the same way and tries to have an open dialog with them about their experiences. Although his mind is not completely changed by these conversations, he continues to ask his children about their use. And for now, with their good grades, he does not feel the need to demand a change in their behaviors.

The misalignment between how his daughter Sandy chooses to allocate attention and his beliefs of how one should attend to the world go beyond homework. Mike struggles when his daughter Sandy pays attention to her phone when they are watching a movie together:

*I'll be watching a movie with my daughter. Just classics to watch them – this one, because we just watched it last night, because it's good or recommend it or anything. But [Goodfellas], okay? I had it recorded, I thought well, we should watch it, what's this about, was it a true story. **While we were watching it she said Dad, [do you realize it took twelve drafts to create the screenplay]? No, I didn't. And did you know that [a lot of the main character's most famous crimes aren't even in the movie]? She was on the phone while we were watching the movie...She'll do that. We'll watch a [show] or we'll watch something and she'll be like oh Dad, do you know that? Pause it. What they did, did you know – and she'll tell me all sorts of things about it. I'll say how do you? Oh. So even while we're watching movies she'll be doing stuff like this. I'll be like you're not even watching. I am, I'm watching. Did you see***

that last thing? You know, so even while we're watching, she'll be – part of the time it's about the movie, but sometimes it's not. - Mike (63), P57

According to Mike, they are watching the same movie, but not sharing in the same experience of “watching” with focused attention. Sandy is on the phone, engaging with the movie in the way that she knows how, but Mike is watching every second of the movie in the way that he knows how. From Mike’s point of view, missing parts of the movie indicates that you are not *really* watching the movie. It bothers him that she chooses to look up information about the movie while the movie is playing. However, Mike does not dislike Sandy’s desire to learn about the movie or to share her information with him, it is the lack of shared attention and shared experience that is bothersome.

From Sandy’s perspective, it is difficult to quiet her mind. She is accustomed to going back and forth between information and being able to stimulate her curiosity whenever she feels bored. Sitting and watching a movie that might be slow or predictable is difficult as she feels that she knows what is going to happen. She reports using the phone as a means to make the most out of her time and to focus her attention:

*If I’m distracted about something, if I know something’s going to happen, or just really bored for some reason. **It’s harder for me, because like this is boring, I want to do something. And then I get in trouble for saying that.** So normally when I’m extremely bored or if I’m distracted, if I know something’s going to happen, if I’m waiting for something, **then I check constantly. They’re like get off your phone.*** - Sandy (19), T57

Therefore, using the phone when she feels her mind wandering is a strategy that she has developed to remain focused. However, from her experience, using the phone to maintain her attention and to avoid boredom has resulted in getting in trouble in the past. This places Sandy in the position to either: 1) not use the phone and remain bored and unfocused, or 2) use the phone to avoid boredom and become focused, but know that her

parents will probably tell her to get off the phone eventually. Although Sandy knows that being on the phone constantly can be a frustrating experience for her parents, the alternative of missing out on information provides enough motivation to make avoiding the phone difficult. Thus, a cycle of experienced and expressed frustration from her parents is created.

Chores as a preferred activity

Chores are another source of parental frustrations that can arise when a child uses the phone in place of doing what the parent currently thinks the child should be doing:

*Sometimes my son, I will say something like, hey, it's time for dinner. And he'll be doing his homework or whatever, and **[sometimes] he goes to check his phone...And then I'll say again, hey, it's time for dinner, and I'll see that he's playing a game or something. And that's when I am not happy...**[then I will say], you're not playing a game are you? And he's like uh [smiles and says] yes, I'm playing a game. I'll help you set the table now. - Patti (46), P22*

Under these circumstances, the phone is a visual and tangible object of distraction and avoidance. As a consequence, the phone can become a symbol of defiance to which a parent can point to. Regardless of whether or not children do listen when they have the phone, the repeated presence of the device during moments of defiance results in Patti feeling that when her son is using his device, he does not listen or do what he is told. In her recollection of these occasions, being forced to ask her son repeatedly to come to dinner appears to be less of an issue than the fact that he is choosing to play a game instead of listening to her.

From her daughter Jennifer's perspective, she admits how distracting the phone can be for her. Yet, she also does not see many other options of what to do with her time and she is not aware of how to spend less time on her device at home:

*I realized how distracting it kind of is, but it's also really helpful, like as a thing to use to communicate. But it's also a little, how should I say it, **it takes away from talking in real life, kind of?**...I don't really use it that often...But it's distracting in everyday life. Not really when we talk to people, but **in [terms] of going outside or distracting [by] taking away your time.** Does that make sense...I think I'd probably like to spend less time on it and more time out with friends or something. **But it's not always available, and there's not always time. I think it's okay.** - Jennifer (12), T22*

Spending time on the device is a way for her to stay active and doing something. She is not opposed to doing activities offline, such as going outside or spending more time with her friends, but she just does not understand how she could spend more time doing these things. She also does not explicitly consider how being on the device is potentially preventing her from doing activities around the house. She fulfills her chores, but they are a little delayed.

Numerous parents brought up delays in attention as extremely frustrating. Many blame electronics for this delay – even in the face of specific instances where this was not the case:

***Everything is delayed because of electronics...**[It's hard to get their shoes on] or brush their teeth or eat. **Because they'll sit there all day and they'll lose track of time.** I tell them the night before, this is what we're doing, this is when we have to be ready. This is our schedule. And so the day comes, and [for example], I get home from my errands and I said you know **we're leaving in 15 minutes, you're not dressed, have you eaten? No. have you brushed? No.** [Sighs] **But actually [two days ago] they weren't on electronics because I had them.** They were [doing something else]. - Sherry (57), P4*

In this example, Sherry begins by expressing her strong frustration with devices. She believes that their presence is the sole reason for all of the delays she experiences with her two children. If they would not sit on their devices all day and be distracted, then they would be able to do the things that they need to do on time. She would not need to hassle them so much. Things would just get done. To illustrate her experience, she gives an

example of how behind her children were two days ago despite her best efforts to prepare them to be ready. Interestingly, in her example, she realizes that the phones were not to blame. As teenagers developmentally defy or delay parental orders, it is to be expected that teens would sometimes be seen spending time on their phone during these moments of defiance or delayed action. This repeated association can even lead teenagers to associate their phone as the culprit.

Her son recognizes that he does not always listen and takes full responsibility for using the phone:

I love to use my phone, since it's nice to contact friends that you don't see over summer much, or play games. But then I know that it takes time away that I could be spending more with my family. So it's kind of love hate relationship a little bit... a lot of the time I spend on my phone and I play games that interact with other people...And then also I'll talk to my friends, messaging or sometimes I [video chat with] them. When I do that, my parents are sometimes nagging me to do things, like, go take out the trash, or come wash your dish, or something. And sometimes I'll just completely forget about that, and I'll just keep going on and I'll say okay one second. And then it doesn't get done so they end up yelling at me, and I blame it on them but I know it's my fault. - Roy (13), T4

Roy does not view his decision to neglect his chores as an active one. He is engaged in an activity, his parents nag him to change his behavior, and by the time his adolescent desire to decide when he will do the chores occurs, he has already forgotten to complete them. He does not believe that he is engaging in intentional behavioral opposition for defiance sake, rather he believes that he accidentally forgets his parents “nagging” until his behavioral opposition is bothersome to his parents. At this point, conflict reaches Stage 4 (Experience of Conflict) and results in his parents yelling at him.

In learning to navigate his device usage, Roy describes appreciating a new family rule that enforces and encourages doing and experimenting with other activities rather than being on the device:

My mom and dad have tried to do things about it, but it hasn't exactly worked out sometimes. But this time my mom is implementing a rule...where we don't get our electronics until [after a certain time and when we've completed all of our tasks]... but I feel like I'd prefer to use my phone, but when I'm doing [my tasks] it reminds me that there are other things to do in life. [For example there's a] book I'm reading...that I'm really enjoying right now, so it's nice to be doing that instead of playing a game.- Roy (13) T4

Without this behavioral intervention, Roy recognizes that he might not have spent time doing other activities otherwise and would not have realized how much he likes to do other things. It seems to be important to help guide positive experiences with other activities as other activities could have been written off with one previous bad experience. The opportunity cost of choosing an unknown activity versus a known activity (e.g., using the phone) can hinder exploration without support to explore other activities.

Feelings of Frustration Versus Expressed Frustration

When a parent becomes frustrated that a child chooses to spend his/her time using devices rather than other activities, they do not always express these frustrations (Stage 2). Parents can keep the underlying reasons for their frustrations internal, but also express a frustration in the form of a demand in behavior change. For example, the following parent Heather harbors her own reasons that her daughter's device usage is bothersome to her. Yet, admits to communicating blanket statements to her daughter. Asking her to stop using the device:

It's my own frustration that that's what she would choose to do with her free time. But when I tell her to stop, she stops immediately. - Heather (46), P56

This experience could be problematic for her daughter if she does not understand when and why her device usage might be an issue nor the reasons behind her mother's injunctions. As with the previous source of frustration (focusing on the phone instead of a

preferred conversation partner), these data suggest that several tactics could help mitigate conflict that can arise when parents feel that their children are focusing on the phone instead of other activities. We heard accounts of open communication, providing for expectations and demands reasons, and coming to solutions and/or compromise together as examples of families actively engaging with potential conflict to prevent it from escalating. Without some sort of open communication, children feel they are on shifting sands, never quite knowing when device usage will cross the line and become “too much” in the eyes of their parents. And parents express a number of opinions but not the dialogue and self-reflection that would help them understand and quality their expectations. With this gap in knowledge, teens are less able to behave ideally with their phones even if they see the value in shifting their behavior and parents are unable to express why such a shift is desired.

Repetitive phone use versus other activities

The degree of conflict can be strengthened when the phone is repeatedly associated as taking the place of another activity or preferred focus of attention:

*They use their phone a lot. **I think what bothers me a lot, and I tell them, is if it affects their productivity, so that's really what it is for me...Because they're supposed to do something and then they're talking to their phone.** Like, “OK, you're supposed to be [doing your chores now]. But then you're still at your phone. **Go out and do it now.**” So they're kind of stuck to it...[I would like her to use the phone] differently in the sense that **I just don't want to see her using it. It's with her all the time, so that's the one that bothers me.** So if they're just communicating, like where I am or what date, what time you're going home and all that, I like that. But for them **to see them looking at it all the time instead of doing something else, then that's the one that bothers me.** - Donna (53), P94*

Donna ties together all of her frustrations with phones and links them to her beliefs about her children's productivity. She views the phone as pulling away her children's attention

from other activities that the children are “supposed to do.” This pull of attention is also understood as a means for her children to be “stuck” on their phones. The visual representation of being stuck, or being on the phone “all the time,” becomes particularly bothersome as it begins to represent the lack of attention placed on other responsibilities. The more she sees her children on the phone instead of engaging in other activities, the more frustrating it is to see her children on the phone. The repetitive nature of this negative association could lead to increasing feelings of frustration as the strength of the negative association is reinforced.

Conflict is further strengthened when Donna’s expressed frustration (Stage 2) is repeatedly not met with agreement or compromise (Stage 3) by her two children. Her daughter admits to using the phone when she wants to:

“Any phone rules, me and my [sibling] technically disregard. [When we don’t follow the rules] she threatens to take our phone away, but for some reason, we still do it. That’s it...I don’t usually bring my phone there unless it’s an emergency but my [sibling] usually just texts randomly while we’re eating and my mom’s just like, “No phones at the table.” And then [they respond] just like, “Hold on. Hold on.” And then [they do] it again two minutes later.” - Elizabeth (12), T94

She blames her sibling for using the phone more than her when their mother asks for the phones to be put away, but acknowledges that both children use their phones whenever they want. When she tries to reflect on why her and her sibling engage in this parental defying behavior, she is not capable of coming to an understanding of what would motivate the two of them to disregard the rules in the presence of such a fearful punishment (i.e., taking the phones away). She goes on to explain that due to this fear, there are moments in which she attempts to use her phone less:

One, I really don’t want to get my phone taken away and two, I kind of know it’s disrespectful so I usually just leave it on the table or somewhere. [In terms of being successful] half the time, yeah. The other half, if I’m bored, like a family event and I’m

just like, 'I don't get what's happening over there. I'm going to use my phone.' ***That's what I do.*** - Elizabeth (12), T94

Although, fear is not the only motivating factor. She is also cognizant that considerable phone use to be disrespectful when the moment calls for no phones (e.g., family dinners). However cognizant she may be, she has not fully subscribed to the idea that phone-use in the presence of others is disrespectful. She “kind of know[s]” that using phones in these circumstances *can be* disrespectful, but she does not experience the same degree of disrespect as her mother. Instead, she admits she has barely thought about her own use or how her family member's phone use affects her:

*Oh yeah, the cell phone [question about going on your phone in the presence of others] because **I just realized I do that a lot**, sometimes, to my parents, but **they barely do it to me** unless we're just in the living room or something. So that kind of made my mind come to focus...I do that a lot. **My mom's talking to me and I'm just like, 'Uh huh. Uh huh.'** [Does my mom do that to me?] sometimes, yeah, when she's playing [a game] on her phone and **I'm trying to get her attention**, but she's just like, “**Hold on one more minute.**” ...Actually, **now that I think about it, I really don't care because everyone in my family does that.** Well, except for my mom, I guess. **Actually I get a little annoyed sometimes too if I don't get their direct attention right away.** - Elizabeth (12), T94*

Elizabeth's initial thought is that her mother Donna ignores her sometimes too when Donna is on the phone playing games. This reflection provides Elizabeth a justification that her entire family behaves similarly with their devices. Yet, this realization is also complicated as she goes on to say that her mother is actually the exception in the family, “I guess.” The overarching normalized phone behavior within the family influences her decision that being on the phone in the presence of others is not bothersome. However, after reflecting more on the idea and past experiences with her mother, she acknowledges that it can be a “little” annoying to not receive someone's attention when you are asking for

it. Elizabeth's ambivalent accounts of the role of mobile phones in her family reveal how reflecting on device usage can alter interpretations of daily mobile phone interactions.

Within parent-teen power dynamics, Elizabeth describes feelings of frustration around mobile phones when she does not receive interpersonal attention. Rather than feeling frustrated that her mother should be doing something else with their time she wants her mother focused on her. She jokes that her mother plays games on her phone a lot, but says she is not bothered by her mother's preference for what she does with her time. On the other hand, Elizabeth knows that her mother does have feelings about how Elizabeth should be spending her time. Donna's preference for Elizabeth to do "something" else with her attention is described as a vague request for Elizabeth to engage in *any* other activity:

Yeah. She's like, 'You've been looking at your phone all day. You should put it down and go [do] something.' When my mom tells me to put it down, I don't even remember what I do. I usually just play with [our family pet] or just watch TV or something and then I come back to it maybe two, three hours later. - Elizabeth (12), T94

Elizabeth does not recall a list of clear activities of what she "should" be doing. Without this direction, she reports merely placing the phone down and passing time by doing any number of activities. Interestingly, watching TV is one of the alternative activities she lists. This indicates that engaging with media is not the issue, rather her mother becomes frustrated with the visual of Elizabeth sitting, head down looking at her phone. When Elizabeth abides by (Stage 3) her mother's expressed frustrations (Stage 2) to put the phone down, escalation of conflict (Stage 4) can be avoided. However, the lack of direction or reasoning understood by Elizabeth suggest the probability of future behavioral

opposition, as she does not understand the underlying motivations for the in the moment behavior change requests.

Factors Contributing to the Escalation of Frustration

In exploring the sources for frustrations, it becomes clear that when one party is empathic to how those around them use their phones, frustration is mitigated. In contrast, repeatedly experiencing moments where one does not understand, no less condone, how those around them use mobile phones can increase feelings of internal frustration and thereby increase possibilities of expressed frustration.

A. Empathetic of current attention focus

Ideological misalignments of attention focus can in some cases be traced to mismatched understandings of what someone is using their device to do. For example, if parents do not understand what their child is doing with their phone, it is challenging to practice empathy around use. This phenomenon can be seen by looking at Andre and his initial reaction to his daughter's use of social media. In the beginning, Andre was against his daughter "wasting" her time by going on social media. He told her that she needed to stop. Andre assumed that social media was a place for people to pass the time with frivolous posts. Nothing more. He did not understand his daughter's goals with social media (e.g., turning social media into a job) or how posting to social media could result in monetary returns (e.g., his daughter now makes money contributing to social media):

*And a lot of young people use [social media] a lot. A: My daughter [has a job in social media]. She gets money out of [social media]...And just because I was – watch what I'm saying. **Just because I was stupid and I told her to stop it because I thought you're***

wasting your time. Now I don't know if I should just shoot myself on the foot because she is good to what she does. - Andre (51), P63

Once he learned the value of social media, the value that his daughter had seen all along, he was shocked. How could he have told her to stop doing something that was, with his new understanding, actually believed to be valuable? After taking the time to learn about his daughter's work, he became more supportive and understanding of her use.

Within the family, Andre's recent shift in his opinions about social media and technology is not recognized by his son, Ruben, to have influenced his mother's opinions. Ruben continues to feel a blanket pressure from his mother that he should do "something" else with his time:

Oh yeah, you can't always be on the phone or the computer. You got to actually do something." And I'm like, "OK." I understand that it's a lot. - Ruben (12), T63

Ruben does spend a lot of time on his devices, and understands his mother's concerns. However, he feels rather guilty over his device usage and wishes that he could spend less time on the phone and more time doing "something else." Although it is not clear what "something else" would be a more valuable use of his time, he continues to feel the pressure to be less "attached." This outlines the importance of mixed messaging coming from parents who have differing views of technology use. While Ruben might experience evolving positive views of technology from his father, Andre, the negative technology views of his mother encourages him to think that his device usage is excessive.

Parents who were cognizant of how adolescent behavior changes over time expressed less worry around their children's' device usage. Awareness of typical adolescent moods also reduced expressed frustrations as parents were able to reflect on

why their child might be turning to devices and away from previous activities that they used to enjoy:

*“That’s true. We used to [play in the pool with toys]. That’s the fun part. She doesn’t like, since [personal electronics], she doesn’t like – **I don’t blame the [electronics]. Maybe her age or her time, she doesn’t like – she loved to [swim], and now she [doesn’t want to go in the water].** I’m like all the lessons we gave you will go down the drain if you don’t practice. We spent so much time on you. Forget about the money, so much time, taking you to the place and getting it down. And it’s a very important skill... **I’m just giving her teen time. Her mood swings, and – I try not to be pushy with her,** but...we see patterns. I’m very pushy.”* - Debra (39), P92

This example shows that while awareness helps to reduce expressed frustration, it does not eradicate expressed frustration (nor do I argue that it should). Debra is troubled to see her daughter turning against a skill that the family spent so much time to help her daughter learn, but she simultaneously understands the importance to give her daughter “teen time.” Pushing her daughter to continue swimming is not something that she wants to do. She realizes that during this “teen time” it might not produce the results she hopes for, but she also acknowledges that it is difficult not to push when she is stuck in the pattern of being the “pushy” mother. The transition into adolescence is difficult for both parents and teens as they begin to navigate their new roles and parents must learn how to take a less directive role in their developing child’s lives.

Parents also play an important role in modeling desired behavior during adolescence. Use of mobile phones is one particular behavior that parents model well before children enter the stage of adolescence, as children experience and learn about their parents’ mobile phone behaviors many years before they have access to and ownership of their own device. Aware of this dynamic, Heather labels herself as a “hypocrite” when she herself models considerable phone use in the presence of her daughter:

*It's funny, because sometimes I'll say to [her], **you're always on your phone.** And she'll have this kind of response, **well you are too, you're just emailing about work.** So why do you think it's any different that I'm doing this and you're doing that? **We have that kind of conversation.** So **I'm aware that I'm a hypocrite** if I say to her you're using your phone when I'm using my phone. So my relationship with my phone. First and foremost, it's work. - Heather (46), P56*

Heather recognizes that her daughter is keenly aware of how much time Heather spends on the phone. She sees her daughter using Heather's considerable phone use as justification for her own time spent on the phone – a justification that Heather understands. Heather's willingness to empathize with her daughter's rationalization of phone use enables her to reflect on the legitimacy of her daughter's claims. If Heather is going to continue spending a considerable amount of time on the phone – even if it is for legitimate reasons such as work – she decides to re-evaluate her expectation that her daughter spends less time on her own device. This realization could thus reduce the escalation of future conflicts as frustrations are internally reformulated (Stage 1).

Although the previous example involves self-reflection on the part of the parent, these data suggest that teens are more generally empathic of how and why their parents engage with mobile phones than vice versa. Even if teenagers express a desire to spend more quality time with their parents, they tend to not blame the phones for taking away potential for quality time. They also express support for time “wasting” activities on the phone as they understand the need for their parents to relax and one role of phones as providing “a break”:

*It would be nice if we could interact more with each other. That would be fun. [But] I can't say I really can [want my mom to use her phone any differently]. **I know when work calls come in she has to take them.** I can't really expect her to not use her phone for those things...**I feel like she's not on it a lot anyways, and I feel like when she is home she deserves to take a break.** I can't really say I expect her to use it any less. - Roger (19), T38*

As teens are less likely to become frustrated with parents' choices of attention allocation, the number of scenarios where teens could become frustrated with parents is greatly reduced. Lower experiences of repeated frustrations could thus provide teens' the emotional space to feel more empathic about parents' device usage and could also inform the lower reported experiences of phubbing by teens outlined in Chapter 4. These data suggest that the more a device is associated with scenarios that evoke feelings of frustration (Stage 1), the more challenging it is to provide room for empathy to exist and the higher the probability that expressed frustrations (Stage 2) will escalate to parent-teen conflict (Stage 4).

B. Repeated source of frustration

When offline behaviors such as grades begin to suffer, it is near impossible to parse the ways in which the phone itself is detrimental. When phones are integrated into children's lives, it is difficult to parse the role of phones in undesirable offline behaviors:

Oh, she was getting [bad grades] and not turning in her homework, and I was like this unacceptable, and she knows that...She has a computer...I go that's for you to do your homework on. There's no reason for anything else. Your focus [should be on] school. I don't care about your friends, I don't care what they're doing, where they're going, who they're hanging out with, I don't care...She'll stay up late talking to [people] on the phone...and I'll have to come in and be like it's [late], it's time to shut the phone off...She knows. She doesn't – she'll push sometimes, and be like, oh mom, I need it. And then I'm like really? Really? Shut the phone off, you know the rules. Shut the phone off, okay. Because she knows if she [messes up], I'll take the [devices] away. - Nancy (48), P72

The activity of staying up late talking on the phone does not guarantee that her daughter Andrea's grades will suffer. But when her daughter's grades begin to decline, Nancy expects that her daughter's full focus and attention will be dedicated to her school work until her grades improve. Nancy views that the phone occupies her daughter's attention. Thus, the

presence of the phone becomes symbolic of Andrea's lack of dedicating enough time and attention to her homework. Each time she witnesses her daughter on the phone instead of focusing on school, the more frustrated she becomes. This association escalates Nancy's frustration to eventually taking devices away when she feels that her daughter is not dedicating enough time to her schoolwork.

Nancy's daughter does recognize how difficult it is for her to put the phone away when her mother asks:

*During school when homework and stuff, and I had to go do it and I was messing around on my phone, **that was usually where you need to go put that away and you need to do your homework...**[I know that it] has to be either silent or off [when it gets late], and you're not allowed to go on it unless your homework is done **and I never usually listen to that.** [The rules] didn't really work. **And she would always get mad.** And there were some times where I just put my headphones in and go do it, I didn't want to have her get mad or anything, because **I know she has had a rough day and she has to deal with a lot, so there were some times when that happened, occasionally, when it happened like it shouldn't be out. And I knew it shouldn't have been out, but I'm a kid and, I don't know.** I should have probably listened, looking back at it, seeing how much she's done and how mad she got about it and arguing that wasn't really necessary because I was only putting it away for a good hour. **I would survive, it was still going to be there. But I never listened. But starting this year, I think I'm going to start listening.** - Andrea (15), T72*

In retrospect, Andrea believes that if she would have just put the phone away for an hour and done her homework everyone would have been happier. Her mother could have relaxed more knowing that the homework was done and she could have relaxed more knowing that she was not putting so much stress on her mother. Until now, she never really listened to her mother's requests to put the phone away. When she tries to reflect on why she never listened, Andrea does not have a clear sense of her own actions – using the excuse that she is just “a kid” and admitting that she does not really know why she could not just listen. Through reflecting on all of her mother's repeated frustrations with the

phone, she decides that she will try to start listening, thus further reinforcing the important role of self-reflection in reduced conflict escalation.

The difficulty in changing phone behaviors, highlighted by Nancy and Andrea, relates to the integrated nature of phone use in daily life. Reliance on phones and shared expectations that people are online and at the ready can foster the unwanted feeling of “having” to have one’s phone:

I hate it. I hate the fact I have to have it. I hate the fact that people think I’m going to respond to them immediately when they call. I feel like it’s – just the demand of the people on the other end of the phone, because they call me I’m going to be available, regardless of my work or what conversation I’m in or if I wanted to be at the beach all weekend and forget about the rest of the world and tune it out. There’s still that expectation that I’m going to be there. I also hate how it affects our family dinners...the phone is much more of a priority over the people, over the adults. I get tired of arguing and fighting the point. - Suzanne (61), P18

Although Suzanne has become tired of expressing her frustrations (Stage 2) due to the lack of positive remedies or behavior changes within the family (Stage 3), she still hates how present the phone is during the once a week family dinners. Interpersonal conflict (Stage 4) is thus avoided as Suzanne decides that arguing against phone use is not resulting in the desired change that she wants. Suzanne is then left with the internal conflict of feeling hatred for the effects of the phone on family time.

When Suzanne has referenced her daughter Alice’s phone use in the past, Alice reports being annoyed with her mother’s line of questioning and reflects on the difficulties she experiences in putting away her device:

If we’re out at a family dinner, I’ll try and put that away. Or I would definitely when we were [out together]. She always has a big thing about it’s [time for me to be with her]...She wants the attention on that. Because if it’s not, I’ll just wander [and be] on my phone...So that’s definitely a time when I really make an effort to put it away and be focused on that. And during [special events] I would say too....It’s hard [to be successful at putting it away], I definitely have to tell people like okay I’m leaving now, because otherwise it will be constant notifications. I get it’s a

problem, because she's like, who are you on your phone with? And I'm like no one, they're texting, I'm not responding. Chill, it's going to be okay. So I have to end the conversation which is kind of a bother, but, like I have to go [hang out] with my mom now, I'll talk to you later. - Alice (18), T18

Alice tries her best to put the phone away under circumstances when her phone use was communicated as problematic from her mother. Yet, even though she tries to put the phone away (especially if they are out together – a conflict inducing issue, if she receives a notification *and* makes the difficult choice to wait to respond until later) Alice still feels that her mother will become frustrated, despite her attempts to avoid this frustration.

Suzanne's expressed frustration is irritating as Alice perceives that she is trying to do what her mother wants, but is still getting yelled at. The lack of recognition for her efforts leads her to have an unaffected response when her mother continues to complain about her use. "Chill, it's going to be okay."

Stage Two: Expressed Frustration

The ways in which frustration is expressed by Person B and experienced by Person A (Stage 2, visualized below) were reported to influence paths to conflict escalation or conflict avoidance. Interpersonal conflict was often reported to be avoided when Person A was described as more receptive and understanding of the frustrations of Person B and more willing to engage in compromise or behavior change. One tactic reported to influence experiences of such receptivity was the approach and lines of reasoning used by Person B (outlined below). The use of threats was also reported to help in conflict avoidance in some cases, but to have little effect in others (also outlined below).

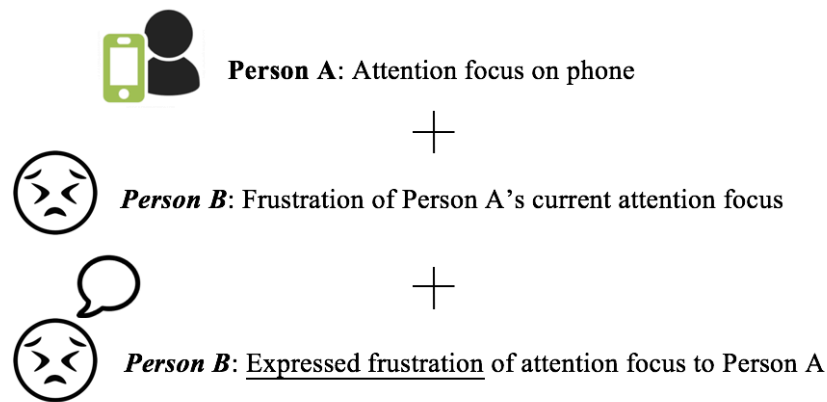


Figure 5.3: Stage two of mobile phone parent-teen conflict

Reciprocity of expressed frustration:

Children are acutely aware when lines of reasoning are not logical. As Ruben describes:

*Overall, I do use it most of the time. **My mom doesn't like it because it's too small of a screen.** And she's like, "Use your computer." And then I do and then she's like, "Use the TV." And I'm like, "**Oh, come on.**" - Ruben (12), T63*

Although Ruben sometimes complies with his mother's wishes to use a screen that is larger than his phone, he has little confidence in his mother's reasoning. When he uses a screen that is larger, he reports that his mother decides that a different screen would be a better use of his time, without providing a logical explanation for this decision. Escalated interpersonal conflict is temporarily avoided when Ruben does not actively defy the mother's in-the-moment requests, but internal conflict is felt within Ruben as he is unable to navigate and understand what his mother wants him to do.

From the husband's perspective, the mother's requests are challenging because they stem more from a desire to assert control than to thoughtfully manage mobile phone use:

*And if [my wife is] with you, she wants you put the phone away...**She still wants to be in control and we have discussed this...and it's not the phone. I know it's not the phone in this case. It's my wife. But the phone is being blamed for it to cover her [requests]. But still, the phone has a lot to do with it. So it is complicated.*** - Andre (51), P63

This assertion of control through policing the phone places the phone at the center of prospective conflict for both Andre and Ruben. The level of conflict experienced by Andre's wife's continual and expressed frustrations with the phone is a central family dynamic. Andre believes that the repetitive expressed frustrations are a means for his wife to assume control in the family, but he struggles because he knows that the phones can warrant frustrations in some cases. His desire for his wife to stop asserting control through her expressed frustrations with the phone is "complicated." This could lead to conflict if Andre's interpretations of his wife's intentions are believed to be for control or it could lead to conflict avoidance when her frustrations are interpreted as warranted. As a consequence, Andre's wife may experience intensified frustrations if she truly feels that her frustrations are associated with the phone but her frustrations are interpreted as being about control.

On top of arguments that are seen as illogical from teens' point-of-view, arguments that feel unattainable can lead to increased experiences of internal conflict in teenagers:

*My parents want us to get off our phones, **especially my [sibling], since [they're] a teenager now, [being on the] phone a lot and stuff and so they've been limiting phone use and etc. Yeah, they want us to get off our phones and do stuff, but when they say that, sometimes we aren't allowed to go out and do stuff which bothers me because – they tell us to get off our phones but there's nothing else we can really do because they're working and so we [try to do something else but] I don't know.*** - Joan (12), T20

Without the perceived ability to "do stuff" outside of the phone, an ability that is perceived to be hindered from the parents themselves, resentment can build.

Even when parents provide arguments seen as logical to teenagers, children may not agree. However, these data suggest that when parents provide a clear rationale for why they react to phone use in a certain way, it can help mitigate conflict. In other words, kids are more likely to accept parental demands when provided a logical reason. And after some time and experience engaging with the phone differently, they may begin to see value in the parental perspective. For example, the following mother Sharon instituted a no phones during dinner rule but provided the accompanying rationale for why it was important:

*Hmm mm, I did not [notice my phone] which is nice and it's what I like and I'm hoping that maybe if she picks up my habit of just leaving my phone and not be on it so much, maybe she'll like it too. So **I just don't know how to approach her with that idea without upsetting her.** [In the past] I told her, "**You're on your phone too much. We're out and about. You should be enjoying time with the family. You should be playing with your [sibling]. You should be interacting with us. I feel like you are interacting but you're not really there because you're constantly glancing on your phone, checking text messages or [using social media].**" - Sharon (36), P35*

Initially, her daughter thought that the idea was "dumb":

*I don't use my phone too much unless we're not doing anything, unless we're just sitting down, eating or whatever. In the car I definitely use my phone a lot, but when we're at home watching TV, definitely mealtime is no phones at all. And **my mom started that rule a few years ago and I used to think it was dumb but it's just become really easy to do and I don't even worry about my phone while we're eating.** And then usually watching TV after we eat for a little bit, no phone either. - Angela (14), T35*

But with time, she stopped worrying about having her phone while eating and realized how "easy" it became to put the phone down. This change in perspective limited how much Angela experiences internal conflict stemming from the new rule and following through with threats.

Reciprocity to expressed frustration with threats:

Threats to take the phone away were described by parents and teens as a form of punishment. As seen in previous examples, many teens do not respond to threats. This could be due to the difficulty of determining when to take the phone away. There are numerous examples in these data of empty threats. The phone enables communication between parent and teen and in some cases location monitoring. It provides an emotional support system for both parents and teens. And often it facilitates homework for teens. These are all aspects of teen phone use that parents appreciate and rely upon. Thus, taking away the phone is not a black-and-white decision. Especially if the child is believed to be overall a “good” kid:

When I’m trying to communicate with her, she doesn’t respond right away...Or she doesn’t answer her phone. So I threaten her [that I will] take it away. You’re not going to answer my call or my text messages, then you don’t need a phone. Because I didn’t get one for you to [talk] with the rest of the world...Q: So have you ever had to take it away? A: No. She’s pretty good. She’s a good kid. - Chelsea (43), P93

Taking away the phone for short periods of time until certain activities are completed can be a successful strategy for getting a child to shift their attention away from the device to complete a task with minimal resistance. However, numerous teens express that taking the phone away for extended periods of time interferes with their peer relationships and causes substantial stress:

Sometimes if my parents get mad at us or something, they’ll threaten to take it away...So it’s incentive for me, because I didn’t necessarily want to use it. But they’ll take it away sometimes, if my mom’s mad or if we need to do something that we haven’t been doing, if we’ve been putting off homework or housework, they’ll take it away until we’re done...One time it was for a [couple of days]. It was kind of stressful, because I was like my friend was going to text me, what am I supposed to do now? So I had to find a different way to get ahold of her and tell her hey, I don’t have my phone, my mom took it away, so don’t text me, I’m not going to be able to respond to it. But most of the time it’s just until we get whatever we need to do done, and then they’ll give it back. - Sandy (19), T57

Threats can be straightforward if the fear of threats is maintained. However, the emotional experience of phone removal can result in increased internal conflict for teens when the phone is viewed as integral to daily life. If the threat and experience of phone removal is repeated often, strains to parent-teen relationships can arise. As a consequence, parents might mitigate in-the-moment interpersonal conflict, but not realize the below the surface ramifications that are occurring as internal conflict builds up in their children. As this process is beneath the surface, it is possible that parents would not become aware of the severity of the experienced conflict by their teen until their child outwardly shares their bottled up frustrations.

Stage Three: Agreement or Disagreement

When Person B expresses attentional frustrations to Person A, Person A can either choose to agree with these frustrations or Person A can disagree with Person B's assessment of preferred attention allocation (Stage 3, visualized below). Disagreements are therefore represented as ideological misalignments of current attention focus between Person A and Person B. This occurs when Person B believes that Person A should direct their attention elsewhere and Person A does not agree with Person B's assessment. In addition, if Person A has repeatedly experienced inconsistencies in Person B's expressed frustrations, propensity for disagreements was also reported to occur. These inconsistencies were described as reinforcing defiance or disagreement as there becomes no guarantee that a change in behavior will result in any change in expressed frustrations.

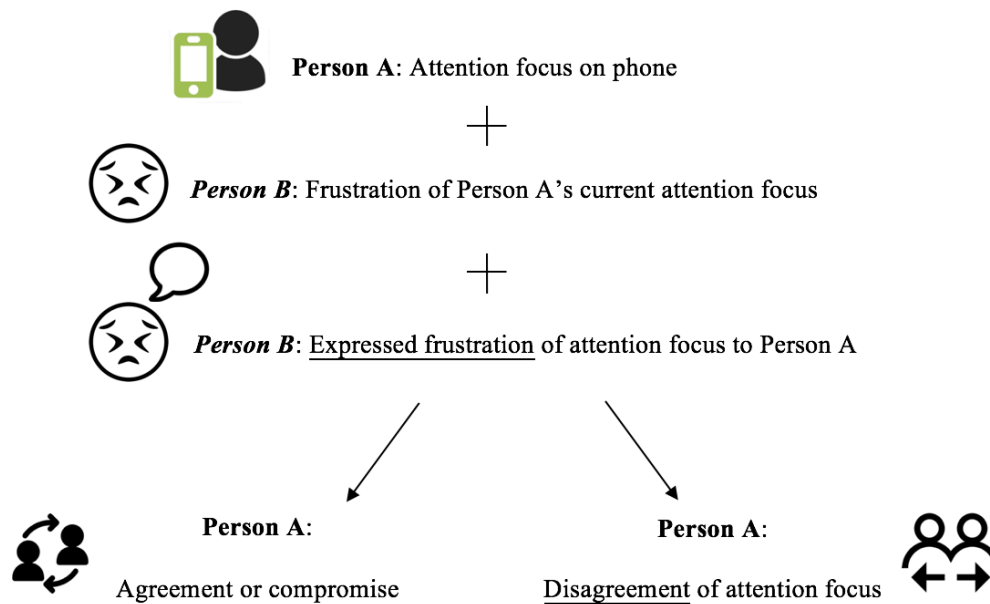


Figure 5.4: Stage three of mobile phone parent-teen conflict

Ideological misalignments of current attention focus

When the following teen, Andrea, reflects on past conflicts with her mother, she recognizes that she often disagreed with her mother when her mother would tell her to get off her phone. During these conflicts, she sincerely believed that she was capable of splitting attention between homework and her phone. She felt like she *had* to use her phone and could not understand why her mother would tell her to get off. How could her mother not understand that she needed to use the phone? Andrea could not find a reason or value in her mother demands. Reflecting during the interview, however, she begins to come to a more generous assessment of her mother's actions and explanation for the disagreements with her mother:

Yeah. Just looking back at it, there have been a lot of decisions that I don't, really I'm proud of, like having to be on it and just snapping at her for a basic thing as my phone. To where I could have just said yeah, okay, I'll put it away, I'll go do my homework, and afterwards she was fine with it. I never really thought of it that way, I

thought she was just being rude or being a parent and like [uses harsh voice] get off your phone! [normally] Looking back, she's one of those parents who really wants me to be successful, and my other friends' parents don't really care. But seeing how she is, it really gives me something to look forward in being a parent. I like when she tells me, get off the phone, because she cares, that's the main reason why. I wish I'd known that. Looking back now, I wish I would have known that she cares that much that getting good grades...I'm going to make the bigger choice and just put it away. - Andrea (15), T72

Once she is able to take a step back and to consider her mother's intentions, Andrea comes to the conclusion that her mother wants the best for her and wants her to be successful.

The value her mother places on putting the phone away is representative of her daughter being more successful at her homework and succeeding more at school. The level of care that she feels with this new understanding of her mother's intentions, and the value of putting the phone down, encourages her to "make the bigger choice and just put it away."

This provides further support that fostering reflection on the nature of parent-teen disagreements could be an effective approach to intervention during cycles of parent-teen mobile phone conflict. Similar to benefits of reflection and empathy outlined in previous conflict stages.

Without such empathetic perspective taking in parent-teen values, the following pattern was often reported to emerge:

Yeah because my mom – well, if I'm on my phone, my mom's like, "Can you go get off your phone? Can you help me at least making dinner or setting the table?" Then I just continue and then she says it again and I continue until she finally comes to my room and tells me to come over here. Then I'll go. Then after I'm done with that, I'll go back on my phone. - Helen (14), T81

The child values being on the device. And she values being on the device far more than her mother's initial requests for help. There are no strong consequences if she continues to engage with the device until her mother takes strong action, and she is allowed to immediately go back on the device after being temporarily forced to put the phone down.

Regardless of how much the parent might *want* her child to want to help with dinner or to set the table and to see the value in these activities, this desire does not outweigh the value her child associates with being on her device. Without open communication that opens the door for perspective taking and alignment of values, it is possible that feelings of internal and interpersonal conflict will continue to rise.

Teens also repeatedly emphasized that being connected to their peer group through the phone is incredibly important. For this teen, there is an added value of being able to communicate with people who are not an everyday component in her life:

*Mm-hm. Because she, it just seems like [my mother is] always there, and the person that I'm texting or talking to is not there. **So I would rather text somebody who is not there, than be with a person who is always there.** just because they're like a constant, you know? **It's frustrating for me because I'm like don't interrupt my conversation. And then it's frustrating for her because she, I don't know, has this preconceived notion that she's a bother to whatever my conversation is.** I mean we could be walking somewhere, nothing else is going on, we're just walking down the street. I'm just texting, and if I look up she'll be like oh, you don't need to look up, just keep doing your thing, I don't want to bother you. Never mind, no. **I'm like oh my god, okay fine. So then I put my phone down but then it turns into an argument about that.** So there's definitely a lot of tension there, because **she thinks I have a lot of other time to be on my phone but I don't.** I can't be on my phone when I'm driving, or when I'm talking to someone else in a conversation. So then it's like at home or when she's driving, then I do have times to be on my phone, but **she does not see it that way at all.** - Alice (18), T18*

Knowing that her mother will always be around reduces the value placed on each individual moment. Alice believes there will be an unlimited supply of time with her mother. With her friends however, she feels that she does not know when she will be able to talk to them next. Unfortunately, this seemingly limited available time for her friends often coincides with time that she spends in the presence of her mother – who then feels disrespected and rejected. Alice, however, is not viewing her decision to talk to friends as a value judgement against her mother and toward her friends. Thus, she becomes irritated

and an argument ensues. Alice believes that if her mother could just understand that she does not have as much available time as her mother thinks and that Alice just wants to be able to have friends that tensions could be mitigated.

On top of friends, the following teen struggles with his parents' concerns about the amount of time he spends on devices:

Usually it's not the phones. It's usually other electronics, like me being on my computer for schoolwork mostly. I'm usually – when I come home, most of my work with school is on [the computer] and everything, so it's all online and I use my computer very, very often for long periods of time. And it's really unavoidable because all of my work is on there for school and everything. But it makes my parents feel uneasy that I'm using it so much, that it could damage my eyes, or something like that. But it's really not something that I can change because my work is all on there. So I don't know. - Marshall (17), T23

He is conflicted between his belief that his parents should understand and value his time spent on his devices doing his school work, but also that he should change his behaviors to make his parents feel less uneasy. For Marshall, using his devices less means allocating less value to his school work, something that he is incapable and unwilling to do. Despite Marshall's motives, he must constantly deal with his parents worrying and complaining about his time spent on devices. This has become a repetitive argument with no mutually agreeable solution. Thus, if his parents continue to express their frustrations in an effort to change Marshall's behaviors, Marshall is likely to continue feeling resentment and internal conflict as he continues to disagree with his parent's assessments.

Inconsistent experienced frustration

Expressed frustration was reported to lead to mutual frustration when inconsistencies in frustration were expressed. For example, the following teen Alice routinely goes on the phone in the car when she is with her mother. There are times when

her mother does not have a problem with Alice going on the phone in the car, but then there are moments when Alice has to “know the language” to interpret when her mother has reached a point of frustration with Alice’s device usage. This is frustrating for Alice, as she cannot predict when her mother will reach this point of frustration with her otherwise routine phone behavior:

*You have to know the language. **She looks at you and you can see she’s pissed from the other side of the car. Fine, well you could have told me. I say like, you could have told me you were upset that I was on my phone, and she’s like no, I don’t want to bother you. Well you were, actually. So there’s no winning for either one of us. She never says like, or if she does it’s like, I’m very frustrated. She makes it sound like she’s asked [thousands of] times before, you know? And it’s really only the first time she’s asked. She’s just like please get off your phone! And it’s like I’m sorry, I didn’t know you wanted something.*** - Alice (18), T18

It’s demoralizing for Alice to hear her mother yell at her as if she asked her to put down her phone “17,000 times before.” Without believing that she has received any prior warnings that her behavior is undesirable, or any discussed rationale about why certain patterns of phone use are okay or not okay in the mother’s eyes, Alice is caught off guard at her mother’s frustration and is immediately irritated. Even if Alice wanted to avoid frustrating her mother, the lack of communication and understanding of what is appropriate or desired leaves Alice feeling powerless. Alice articulates an insight about her own relationship her mother that translates across these parent/teen dyads; when parents are clear and upfront about when they want their children to not use the phone and why, conflict may be mitigated. However, when parents swing between seemingly random outbursts, and calm dialogue, teens experience confusion that easily can become frustration and accidental behavioral opposition.

The most common inconsistency expressed by teenagers about parental requests centers around the vague notion of being on devices “too much.” For numerous teens,

tensions are experienced when their parents reach an unpredictable moment when they come to the conclusion that their child's in-the-moment device usage is "too much":

Sometimes we use it a bit too much, but then either my mom or my dad would realize that, and they would say get off and stuff. Q: How much is too much? A: Um, I don't know a specific time...Well, usually we're all on the electronics every day, but then not excessively too much. Usually that happens once every two to three weeks or something. - Ashely (13), T78

Children do not know when their parents will be pushed over the edge into the "too much" territory. Even if they agree that "too much" device usage is a bad thing, it is difficult for them to pinpoint how much is "too much" and therefore act accordingly:

They didn't want me to use it too much, and they didn't want it to make me distant from everyone. For the first couple of months it did, but then they brought it to my attention and I stopped using it so much...Too much, they can kind of tell when too much is too much...I never really notice it, but they know. - Nicole (12), T45

Tensions over too much device usage can also creep up even with when families have established rules such as no phones after bedtime on school nights and no phones during dinner:

Well plugging in at [bedtime], on school nights. And then no phones at dinner. And besides that, there's no other rules. But if sometimes if we're just on it for super-long, or when we're watching a movie, my dad will get mad at us and tell us to turn it off....It's just he'll get mad at us. Like if we're on it too much. Jane (16), T91

Family policies limiting engagement with mobile phones are not sufficient to protect children from the seemingly illusive "too much" mark, thereby causing confusion. These inconsistencies can lead to an abandonment of trying to limit oneself on the device. If teens are waiting for parents to get mad and yell at them, they do not learn to assess for themselves what "too much" might be. This is worrisome for both parents' and teens' future experiences of teen mobile phone use outside of parental supervision. Without providing the space and scaffolding for teens to learn constructive device practices and

decision making, it is possible that device usage outside of the home could be negatively affected.

Stage Four: Escalation of Conflict

As discussed in Stage Three, disagreements of attention focus often lead to Stage Four, Escalation of Conflict:

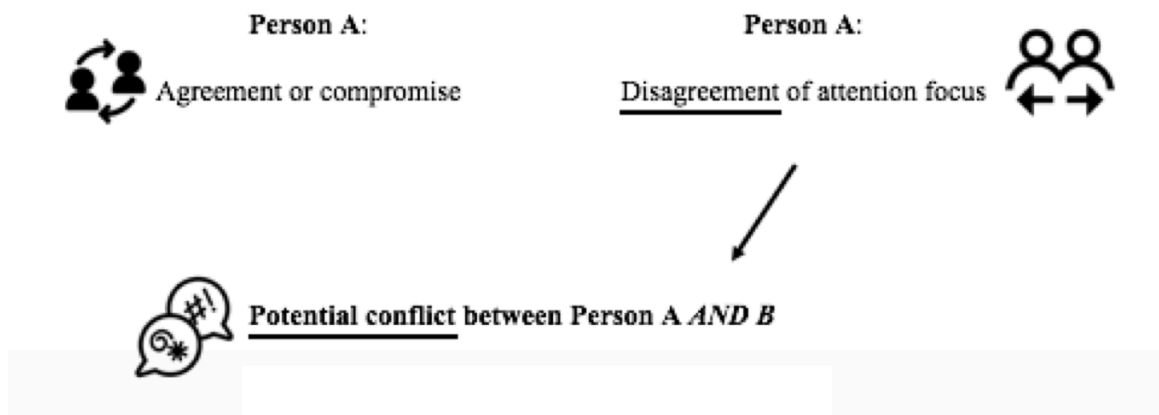


Figure 5.5. Stage four of mobile phone parent-teen conflict

Participant accounts of escalated conflict are outlined below.

Strength of Disagreement and Severity of Behavioral Opposition

Strength of disagreement and severity of a child's behavioral opposition were associated in participants' descriptions of conflict escalation. The stronger the disagreement and/or Person A's repeated refusal to alter desired behavior was often reported with high levels of frustration and conflict for both parents and teens. For example, the following mother Sharon recalls the utter devastation and fury of anger she

experienced from her daughter when she removed her daughter Angela's phone due to poor grades:

*Yeah...she's attached to that thing. Yeah, because I remember I took it away and **she practically died**. She was so angry and that's why I didn't want – **I took it away [and]...she nearly lost it.***

Q: What prompted that?

*A: Just the excessive use and I can't remember exactly but I know she got a bad grade... So I said, "Well, **until you can bring [your grade] up, you're not getting it back. You need to study and do your homework or whatever,**" and so I took it away. **And she was devastated.** I mean, she's a teenager and they tend to get pretty dramatic but...[she was] **very angry. And I remember when I gave it back to her, the joy on her face was priceless and it was like Christmas.** [Without the phone] she had no choice, but I notice, **she hung out with us more. She actually took the time to talk to us. She actually [came] and [spent time with us] so that was nice. But yeah, maybe I should take it more often.** - Sharon (36), P35*

Her daughter "practically died" when she took the phone away and "it was like Christmas" when she was able to get her phone back. Two extremely opposing emotional responses, linked back to Angela's internalized attachment to the device. Although Sharon reflects on the positive interpersonal moments that arose during the no-phone time period, she remains hesitant to bring up frustrations after the extreme emotional response that she experienced:

*I do notice my daughter being on the phone quite a bit and **I try not to address my frustrations as much because I have spoken about it before and it did bother her.** And I don't want to rock the boat so to speak and cause a fight or another argument so **I just try to pick my battles with the whole cell phone thing, but it bothers the heck out of me...** And we're both busy and when she's at school and when she gets off from school she has homework and [cheerleading practice]. When she gets home, there's a small window for us to talk... when we get a chance [to talk] which is not often, which I would love more of that but I notice she's on her phone a lot, quite a bit so it gets annoying. And I'm sure I'm not the only parent that's going through that. Because she's a great kid and she's pretty awesome. We're very close, obviously. But **yeah, it just annoys me when she's on her phone. I feel like I'm not there, like I'm nonexistent.** - Sharon (36) P35*

The issue of poor grades might have been incentive to take away the phone for a short period, but the negative interpersonal experiences of the past leaves Sharon wary of

making phone use a constant issue. Sharon instead internalizes her feelings of annoyance and frustration as well as the isolating experience of feeling “nonexistent” to her daughter. Keeping these feelings to herself is seen as an attempt to avoid “rock[ing] the boat” and creating issues within their otherwise reported close relationship.

When frustrations bottle up over time, escalation of conflict can be a heavily emotional time for both parents and teens. The following parent reports difficulty recalling events that led to an eventual meltdown from her daughter, but still remembers the extreme emotions (screaming and crying) that resulted from strictly demanding that the phone could not be out:

Around that meltdown, yeah, because I was like, “You can’t have your phone out.” I forgot the exact – where I stood about it. Isn’t that funny? But I remember being really strict about it and saying, “You can’t be on your phone and on the computer and on the – it doesn’t make sense.” And she’s like, “I need it.” So that was really tense and that was a three-hour argument. A lot of screaming, a lot of crying. - Anne (34) P51

By not expressing her frustrations when the feelings initially presented themselves, Anne finally reached a point of extreme frustration. This heightened experience of frustration poured over into the strict refusal for her daughter to use the phone and computer for such considerable amounts of time, citing that it just did not “make sense.” The in-the-moment decision to remove the phone was stressful to the child, causing her to scream and cry in the presence of such an unprepared for punishment. As the phone is central to daily life for the vast majority of these teenagers, her emotional reaction is not surprising with her screams of “I need it.” Therefore, just as inconsistent expressed frustrations can be stressful and can lead to increased reported experiences of conflict, so too can unexpected experiences of punishments.

Model of Parent-Teen Mobile Phone Conflict

A summary of the full model of parent-teen conflict is visualized below:

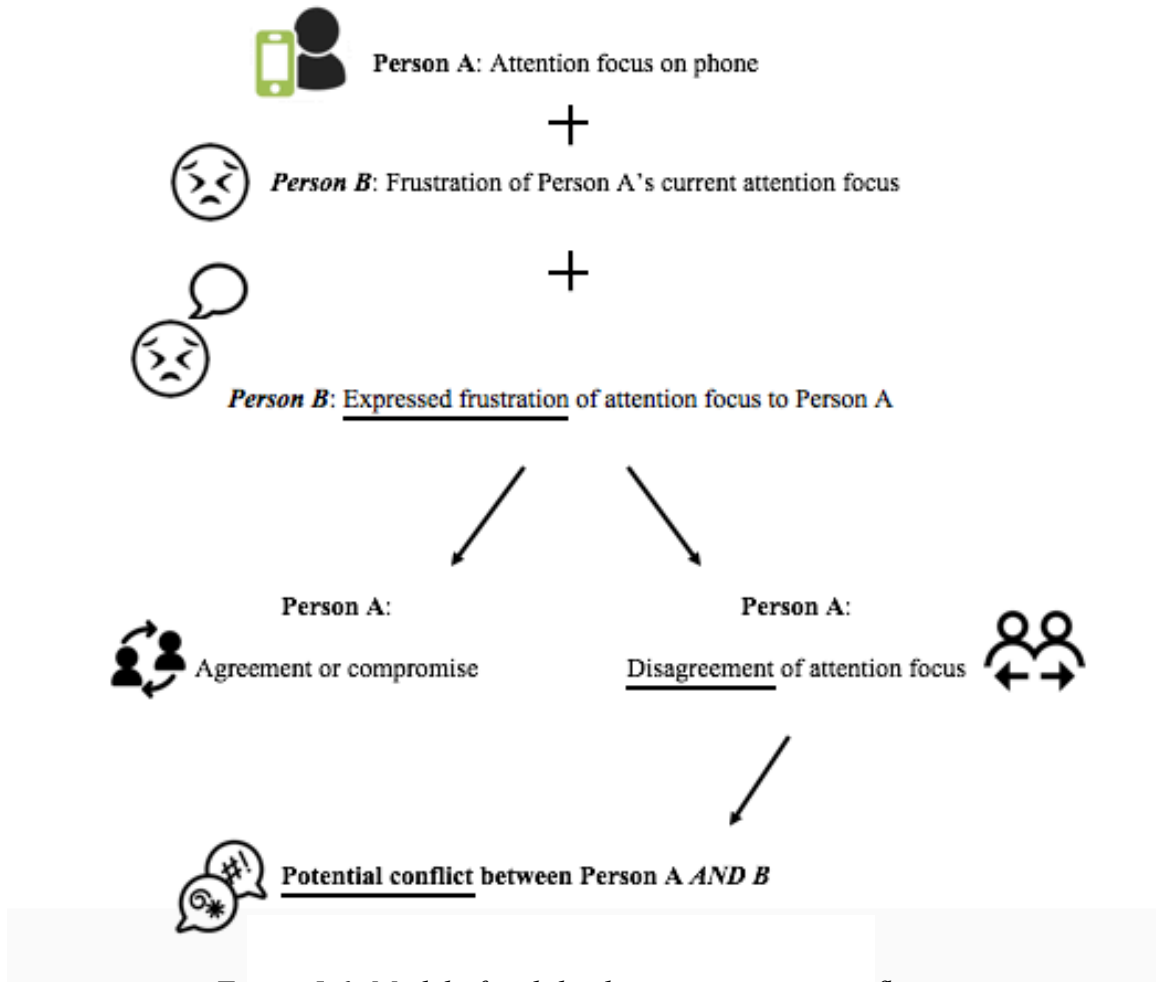


Figure 5.6: Model of mobile phone parent-teen conflict

To illustrate how conflict progresses throughout the model, a parent-teen example of mobile phone conflict (discussed in previous stages), is outlined for a parent Donna and teen Elizabeth:



Person A (Elizabeth, Teen): Elizabeth's attention focus is on her phone – Elizabeth is relaxing at the end of a school day by spending time on her device, a usual activity for Elizabeth.



Person B (Donna, Parent): Frustration of Elizabeth's current attention focus – Donna wishes Elizabeth would do her chores *right now*. Donna believes that texting is currently preventing Elizabeth from doing chores. IF Donna does not express frustration, interpersonal conflict is avoided and conflict is internalized.



Person B (Donna): Donna's expressed frustration of attention focus to Elizabeth – "Why are you still texting?!?" Put your phone away and do your chores!"



Person A (Elizabeth): Disagreement of attention focus – Elizabeth is annoyed that the phone is an issue. She does not see doing chores and time spent on the phone as being related. She wanted to relax before doing chores. IF Elizabeth disagrees with Donna's reasoning but puts down the phone in the moment anyway and does her chores, interpersonal conflict is avoided and internal conflict for Elizabeth is internalized.



Conflict between Person A (Elizabeth) and B (Donna) – Elizabeth continues to use the phone knowing that she will do her chores soon, but Donna still believes that the chores should be done *right now*. Conflict escalates.

Figure 5.7: Example of mobile phone parent-teen conflict

By outlining conflict for this pair, we can see two moments within the model where interpersonal conflict can be avoided in the presence of a disagreement over current attention focus. First, if Person B (Donna) disagrees with Person A's (Elizabeth's) current attention focus and decides to keep their frustrations to themselves, conflict remains internal to Person B. Second, if Person A continues to disagree with Person B's assessment of their attention but decides to compromise their behavior to abide by Person B's request, conflict remains internal to Person A as they engage in a behavior for which they do not agree with. Escalated interpersonal conflict is experienced when Person B refuses to internalize his/her frustrations and Person A refuses to comply with external demands in contention with his/her internal goals. The source of these frustrations is traced back to an *ideological misalignment of current attention focus* where two parties fundamentally

disagree on the values, beliefs, and interpretations of where individual current attention should lie. This ideological misalignment requires that Donna and Elizabeth *disagree* of where attention should be focused *in-the-moment* and escalated conflict requires that this misalignment is communicated without compromise.

The influential factors discussed in this chapter, including the experience of ideological misalignments of attention focus, are summarized below for each conflict stage. These factors were found to influence the paths and degree of conflict reported:



Source of Frustration: Focus on the phone *instead of a preferred conversation partner or preferred activity*.



Factors Contributing to Experience of Frustration: *Empathetic and reflective* of attention focus – is person B understanding of Person A's phone use? *Repeated frustration* – how many times has this been an issue in the past?



Mechanics of Expressed Frustration: What *line of reasoning* does Person B use to express frustrations? Does Person B make *threats*?



Sources of Disagreement: What *value* is placed on current attention focus? Is there an *ideological misalignment* of value or of attention focus? *Inconsistent experienced frustration* – has the behavior in question been an issue in the past?



Severity and Probability of Conflict: *Strength of disagreement* – does Person A strongly disagree with Person B assessment? *Severity of defiance* – is Person A's disagreement unacceptable to Person A?

Figure 5.8: Influential factors in model of mobile phone parent-teen conflict

Summary

The presence of mobile phone conflict was reported to be common (70.35%) across families. That said, the presence of generalized conflict in adolescence has been found by

prior researchers to be a common occurrence within parent-teen relationships (Leigh & Peterson, 1986; Arnett, 2014). In line with prior models of parent-teen conflict, conflict is to be expected when behavioral oppositions occur (Laursen & Collins, 1994). These data reveal that behavioral oppositions are associated with mobile phones conflict in the home. However, determining the exact role of mobile phones in parent-teen relationships is complex. Through using qualitative accounts of parent-teen conflict around mobile phones the role of ideological misalignment and in the moment assessments of attention allocation emerged as playing a key role in internalized and expressed conflict.

In addition, the role of generational differences emerged as a key factor in ideological misalignment:

*My parents don't really like cell phone usage that much, but it's mainly because they grew up in a time without it, and they feel it's a waste of time... **They just don't find the value in the technology as much as one who's more fluent with it would.** – Frank (19), T53*

While teens expressed a great deal of forgiveness and empathy for their parent's attentional choices with their phones, parents were often less empathic and understanding of their children's in-the-moment decisions around mobile phone use and attention allocation. Teens regularly brought up this sense that their parents do not understand them and assert vague and unpredictable demands in describing frustrations with their parent's beliefs about appropriate use. This is line with Blackwell and colleagues' (2016) findings that parents often struggle to understand how their children are using technology.

Teens often admitted resistance to mobile phone limits that their parents attempted to enforce, and in some cases openly ignored parental requests to stop or divert attention. This finding supports the difficulty of technology rule enforcement found in prior work (Blackwell et al., 2016; Hiniker et al., 2016; Mazmanian & Lanette, 2016). However,

reflecting about parental point-of-views inspired perspective taking and respect for parental requests by teens. Thus, it appears that reflection and open communication could be beneficial to parent-teen relationships by allowing higher levels of understanding regarding mobile phone usage.

Parents and teens also reported cycles of mobile conflict that can be reinforced with the practice of internalizing mobile phone frustrations over time. When parents in particular do not openly communicate frustrations with mobile phones as they arise, when parents eventually reach a breaking point and express their frustrations to teens, teens are often caught off guard and can in turn experience internal frustrations with parents. This experience can support accidental behavioral opposition as teens cannot predict when parents will become frustrated with mobile phone use. This is stressful cycle for teens and parents. Similar to previous work, it is also difficult for parents to predict when they will find themselves at their breaking point (Mazmanian & Lanette, 2016).

Parents describe the desire to avoid conflict by internalizing frustrations, but these findings suggest that such internalizations can lead to escalated conflict if frustrations are not addressed. Again, parents and teens who reflect on mobile phone in the family and openly communicate desired mobile phone use report reduced cycles of conflict. This indicates that mobile phone conflict interventions could be designed around parent-teen reflection and guided communication of underlying mobile phone desires as well as desires for attention. The current ideological misalignments of attention existing between parents and teens might shift as today's teens become parents, but in this dissertation I limit my scope to what this misalignment means for parents and teens in 2018 in Chapter 6.

CHAPTER 6: Conclusion

The vast majority of study participants (87.44%) reported some version of mobile phone concerns for themselves, their families, and/or society at large. Moreover, these concerns were often presented alongside the vague notion that being on devices “too much” is something to be vigilant against (Chapter 3). The phrase “digital detox” was reported in 2017 as one of the ten “digital transformations” to look out for in 2018 (Forbes, 2017) and one of the ten “technology buzzwords you won’t be able to avoid in 2018” (Data Pine). As mobile phone addiction concerns continue to be reported on by the media and data privacy concerns begin to enter into the limelight with recent social media scandals, it is not surprising that ideas of digital detoxing are becoming more mainstream (Forbes, 2018). On the other hand, it is remarkable that pressures to “digital detox” would reach a level of recognized importance to be grouped within the top ten fundamental technology changes of 2018. These pressures are also worrisome provided the previously outlined (Chapter 2) problematic nature of mobile phone addiction metrics and the lack of scientific consensus regarding how mobile phone addiction manifests or how best to implement treatment (Billieux et al., 2015; Lanette & Mazmanian, 2017).

The mobile phone addiction narrative

Early research on mobile phone addiction included the development of metrics to assess the presence of a hypothetical addiction to mobile phones. However, these metrics were often borrowed from other behavioral addiction assessments (e.g., gambling addiction) and their design was interpreted to assess the hypothetical presence of mobile phone “addiction” in relation to other metrics (Billieux et al., 2015). This confirmatory

approach to assessment therefore determines which individuals can be labeled as mobile phone “addicts” in comparison to other behavioral addictions (e.g., gambling), but it does not determine how mobile phone addiction might *differ* from other behavioral addictions. This distinction is important given the ubiquitous nature of mobile phone use and ownership in today’s digital age (Pew, 2018). In addition, this risk-averse confirmatory approach to understanding technology is the basis of what has become a widespread and pervasive narrative of addiction that is perpetuated by mainstream media and bolstered by research. High degrees of mobile phone related concerns described in this study (Chapter 3) provides support that negative technology messages are resulting in internalizations of these addiction narratives in ways that could be detrimental to individuals’ well-being.

Another example of confirmatory approaches used to assess mobile phones is the use of correlational data to make generalized claims about the impact of mobile phones on society and individuals. While correlational data can be useful to generate hypotheses for future work, such data is instead often used as evidence of the impact of mobile phones (Twenge, 2017). On the surface, correlational findings can appear compelling. However, these findings often lack a deeper understanding of why these correlations might be occurring, what other factors should be considered when interpreting these results, and what plan could be put in place to further examine the existence of these correlations.

After interacting with 242 parents and teens in a mixed-methods analysis of the mere presence of mobile phones on parent-teen interactions, I learned how little we currently understand the role and influences of mobile phones in individuals and on society. This is to be expected, given the short time frame that mobile phones and smartphones have been in use. While mobile phones have become increasingly integrated

into daily life, the iPhone only recently celebrated its ten-year anniversary in 2017 (Wired, 2009). In addition, the ways in which we have learned to interact with and to use smartphones have changed dramatically in the past decade. As the plans and situated actions associated with mobile phone users have morphed across this time period, the metrics used to understand mobile phones have often remained tied to previous patterns and understandings of use (Suchman, 1987). Through conducting this dissertation, I witnessed the problematic nature of this trend and provide insights below for the potential unintended consequences of existing mobile phone research approaches.

Although I was aware in the beginning stages of this work that narratives of mobile phone use are often simultaneously encouraging (e.g., increasing possibilities for positive connections with loved ones and friends) and discouraging (e.g., ruining relationships with loved ones and friends) (Harmon & Mazmanian, 2013). I was surprised to learn how these confusing messages present themselves in parent-teen dynamics and in interpretations of mobile phone use. While parents and teens use their mobile phones often and for multiple reasons (e.g., work, maintaining relationships, learning, keeping up-to-date, etc.), concern and guilt associated with using devices was pervasive (Chapter 3).

Both parents and teens are confused as to what appropriate use should be and are continually exposed to conflicting messages of what appropriate use would look like. They often feel pressure to use their phones less, but how much is less? How much use is too much? What use is considered good? What use is considered bad? As I witnessed parents and teens struggling to make sense of these questions, it became clear that the compelling lens of mobile phone addiction reported in the media echoed in concerns and/or distancing

moves from their devices. These findings motivated me to explore how mobile phone addiction metrics were developed and deployed.

Mobile phone addiction metrics

I thought that understanding the origins of mobile phone addiction metrics would provide insight into the legitimacy of these concerns and how addiction pathology might manifest for participants. However, my investigation only left me with more questions. I learned that the origin of addiction metrics was a satirical article written on internet addiction and the development of metrics often relied on borrowing metrics from other behavioral addictions, such as gambling (Billieux et al., 2015). I also learned the outdated nature of measurements, which were developed before the emergence of smartphones (Bianchi & Phillips, 2005). It became clear that scholars need to re-evaluate the degree to which current metrics can assess mobile phone addiction as a pathology. Currently, confirmatory and outdated methods cannot discriminate or measure true pathology that may be associated with mobile phone use. The media's obsession with the addiction narrative jumps on scholarly findings proclaiming that "Your Smartphone is Ruining Your Life" (The Independent, 2017) and how "You're Addicted to Your Smartphone. This Company Thinks It Can Change That" (TIME, 2018). Missing in this conversation is the question of internal reliability of these metrics to assess mobile phone addiction versus participants' knowledge and exposure to mobile phone addiction narratives.

The problematic nature of these measurements combined with massive media exposure perpetuates mobile phone concerns for parents and teens; particularly because the current narrative does not provide actionable solutions to considerable phone use. I

argue that we are just beginning to understand the unintended consequences of this mobile phone addiction narrative for family dynamics, wellbeing, and sense of self. Based on the mobile phone addiction internalizations that I observed within these data, the guilt and concerns regarding mobile phone use were not only reported to fill emotional space for both parents and teens, but they were also reported in some cases as the lens through which participants used to make sense of their mobile phone use. Despite that current mobile phone use practices are often the result of structural (e.g. work, school) and collective dynamics (e.g., social and relationship norms), and are thus difficult for individuals to change.

Reframing the addiction narrative

How might we alter our approach to thinking about devices in a more situated and empathetic manner? First, I suggest that we need to pinpoint exactly what are we concerned about regarding mobile phone use. After the advent of mobile phones, there have been several societal changes that are correlated with the recent increased integration of mobile phones into daily life (Twenge, 2017). If we are concerned about mental health, we can see a reported decline in mental health for adolescents with the increase in mobile phone use over time (Mojtabai et al., 2016). However, this finding only applies to girls, who historically have scored better than boys. Alternatively, if we use the same correlational approach to look at positive societal shifts, we see overwhelming positive societal changes over time. In the United States, statistics report lower levels of crime, reduced levels of teen pregnancy, higher levels of high school graduates, increases in college graduates, and declines in extreme world poverty (Pew, 2018; CDC, 2017; Census,

2016; Our World in Data, 2017). These positive societal changes are correlated with the rise in mobile phone ownership and use, but so are the previously mentioned negative shifts.

Due to the correlational nature of these relationships, it is difficult to attribute cause to mobile phones and we should stop using these correlational results as evidence of mobile phone effects. Instead of assuming that mobile phones are to blame for negative associations or to credit mobile phones with positive associations of societal change, we should take this moment to investigate what motivates considerable use for teens and adults. What are parent and teens goals with technology? Are they meeting these goals? How might technology help or hinder their goals and why? Exploring these questions will allow for a more contextualized understanding of mobile phone use and will provide more nuanced insight into how to address mobile phone problems if underlying goals are not being met.

In addition to exploring the underlying motivations for technology use, it is important to consider how a success-focused approach, rather than a risk focused approach to mobile phones might alter our interpretations of mobile phone use. I do not suggest that we should take an opposite approach to understanding mobile phone use, but I do believe that we should consider how our interpretations of mobile phone use is influenced by the lens in which we choose to evaluate use practices. For example, if a confirmatory success-focused approach (e.g., how mobile phones can increase learning outcomes, improve relationships, improve mental and physical health issues, etc.) was implemented, we might see an increase in participants who report that they do not use their phones enough. Instead of these extremes, I suggest that a more middle-ground

evaluative approach be taken with mobile phones to better understand both how, when, and why considerable use of mobile phones could result in negative effects (e.g., depression, sleep deprivation, etc.) as well as how, when, and why considerable use could result in positive effects (e.g., phone as a cognitive prosthetic, increased feelings of competency, increased opportunities to connect, etc.). In addition, I suggest conducting a more exploratory analysis of motivations for considerable phone use versus a confirmatory framing that considerable use is representative of mobile phone addiction.

Mobile phone addiction versus considerable use

What if we shifted our existing interpretations of considerable mobile phone to serve as representations of the understandable shock and awe that was associated with the mobile phone and digital revolution, rather than a manifestation of a clinical addiction? Infatuation can often mimic addictive behavior, indicating that mobile phone infatuation could be an alternative interpretation to considerable mobile phone use (Tennov, 1998). Experiences of mobile phone infatuation is also not surprising, provided the exciting and alluring changes that smartphone integration and development brought into the world. Smartphones remodeled how we interacted with friends and family members, how we stay connected at work, how we access information, how we capture experiences, how we shop, how we pay bills, how we support our physical and mental health – the reach of smartphones into everyday activities is expansive. It is thus expected that individuals would spend a considerable amount of time on their phones, especially as phones have continued to improve, add new features, new possibilities. In addition, human beings

embrace novelty. As phones continued to provide novelty, it is predictable that people could be driven to engage in higher amounts of use (Alter, 2017).

I watched some participants describe the highly emotional experience of receiving their first phone. One participant recalls crying from the excitement:

I just knew I wanted a cell phone...some of my other friends had phones. I would go and ask my parents, but they were like no. And I got a little angry with them, because I didn't understand why they wouldn't let me have one...I just remember, because I got my phone at Christmas...I opened up this box...And there was the phone...I was so happy I even cried. – Tobias (15), T49

Yet, when the same participant reflected on their current smartphone use, the tears and joy are all but removed:

I don't really typically use it that often. I'll forget where I put it, and whenever I use it just to check if I got a text from a family member or a friend, I don't know where I place it. I'll just leave the room, leaving it there. I don't take it wherever with me. So I don't use it too often. - Tobias (15), T49

As novelty wanes, it makes sense that people will begin to exit the infatuation stage and to experience feelings of annoyance, disillusionment, and even despair (Gottman, 2014). It is possible that the media narrative of mobile phone addiction is increasing in tandem with the reduced infatuation with devices. As infatuation decreases, the ability for mobile phone addiction narratives to resonate with people increases as the phones begin to provide more negative experiences with diminished novelty (e.g., fake news, privacy concerns, relationship conflict – explored further in Chapter 5, etc.). As such, a decade after the emergence of the smartphone it is time to re-evaluate motivations of considerable mobile phone use once the infatuation period has subsided.

Experiences of parent-teen conflict

With the ubiquitous nature of mobile phones, the reported various instances of mobile phone conflict in families (70.35%) was not unexpected. The integrated nature of mobile phones must be considered when interpreting mobile phones as a source of conflict rather than a symbolic artifact present during other underlying motivations for conflict. When interpersonal conflict was reported to occur around mobile phones, it was often attributed to an ideological misalignment of attention focus, ranging across a myriad reasons of preferred attention focus. This finding is compatible with the definition of mobile phones working within the “attention economy” and previous findings that disagreements of attention and mobile phones is the source of conflict between adults (Davenport & Beck 2001; McDaniel & Coyne, 2014). However, the interpretation of the phone as a problem becomes interesting when we explore reported instances of mobile phone parent-teen conflict.

For example, a mobile phone could be interpreted as the source of conflict when a parent reaches a boiling point regarding the lack of chores being done by their child if the parent attributes the lack of chores being done to the phone. The association of the phone with the lack in chores could be strengthened with the increasing presence of the phone, yet it is unknown if the chores would be done without the phone. The ideological misalignments of attention experienced in the presence of mobile phones could thus lead to stronger associations of the phone with conflict. Each new experience of conflict in the presence of a phone could then lead to even stronger negative associations with the phone. As a consequence, the phone could then become an evocative object (Turkle, 2011) with parents finding common ground among other parents regarding the phone as a main source of conflict. However, when exploring the underlying motivations for conflict, the

differences between families can become quite unique. In addition, a false attribution of conflict to the mobile phone can lead to both resentments in the accused, as they do not agree with assessments of source of conflict, and/or transfers of conflict to another attention allocating activity (e.g., a teen continuing to avoid chores by placing attention on sports).

To mitigate experiences of conflict, I found that for parents and teens who reflected on their technology use and who participated in open communication together, that these parents and teens reported lower experiences of conflict within the home. This finding encourages the possibility for mobile phone conflict interventions, if designed around open communication and technology reflections. These moments of openness and reflection encourage a deeper examination of the underlying origins of conflict, so that parents and teens can have a conversation regarding desired behavior void of mobile phone blaming. Mobile phone blaming can be particularly harmful when parents and teens view their phones as extensions of themselves and/or if they are engaged in what they deem positive activities through the device (e.g., keeping up with work demands, maintaining relationships, improving skills, etc.) and report being punished or yelled at for being on the device while engaging in such activities.

In addition, placing blame on the phone instead of verbalizing what in particular is bothersome in-the-moment can lead to increased possibilities for miscommunication and misunderstanding of what the desired behavior would be. For example, if there is a desire to share in the experience of watching a movie together, then the use of a phone during the movie could distract from the ability to share in the *same* experience of watching the movie. However, if what is communicated is that “I don’t feel like you’re paying attention

when the phone is present,” and there is an ideological misalignment of attention abilities, the accused party could provide the rebuttal of “but I am paying attention.” Yet, if the request was framed as “I would like to share in the same experience of watching the movie without phones,” this directive and request is more easily understood and arguments around abilities of attention are removed from discussion. It is therefore also imperative for parents and teens to self-examine *why* other’s phone use is bothersome and what exactly is the desired altered behavior. With the phones increased presence in family life, it could be easy to correlate and attribute all positive and negative experiences with the phone rather than examining the underlying mechanisms of positive and negative experiences.

High degrees of reported conflict were associated with parents and teens having misaligned ideas about whether or not being “on” devices is positive or negative depending on which activities teens are actually engaged in on the device. This is particularly true when parents are averse to ALL use and teens believed that their use is positive (e.g., doing their homework, maintaining friendships, learning on the internet, reading, etc.). When teens were reportedly punished for being on devices regardless of what they were doing, teens often expressed doubt about their parent’s decision making and in some cases reported resentment for what they believed to be an overall lack of trust. Alternatively, when parents were interpreted as being aware of what teens are doing and in turn punished teens selectively depending on actual phone activities, trust seems to be maintained and teens often reported higher levels of understanding of parental perspectives. This indicates that increased levels of parental awareness regarding phone

use could have a positive effect on parent-teen dynamics if parents are more informed and expressive during punishment decision making.

Mobile phones can also become visually symbolic of shifts in attention, yet individuals often mentally shift attention during a conversation without the presence of any external factors such as phones. These shifts in attention can also be unintentional, indicating challenges to focused attention even if focused attention is desired (Smallwood & Schooler, 2006). Focused attention is therefore more difficult to achieve than is rationalized within reported irritations of mobile phone attentional shifts. However, it is understandable that the visual depiction of attentional shifts provided by mobile phones could be an irritating experience. Yet, it is possible that if we altered the ways in which we define what it means to pay attention, that these experiences of irritation could be reduced. This was found in families where mobile phone use was normalized. As people communicate with non-verbal cues, the behavior with the phone also has become a part of these non-verbal cues (e.g., sound on versus vibrate or silent, phone facing up or down during conversations, phone location during various activities, etc.) Families that agree on these cues and behaviors report lower feelings of conflict as there becomes an agreement among family members of “appropriate” familial phone use. There is therefore no generalizable “appropriate” use of mobile phones across families as these norms are determined on a family-by-family basis.

Previously reported mobile phone concerns were also found to play a role in the reported experience of mobile phone conflict. The more fearful parents were reported to be about phones, without established reasons and relatable examples, the more that teens reported to lose faith in their parent’s interpretations of appropriate use. In other cases,

parental concerns were mirrored by their children, indicating that parental beliefs of mobile phone usage are potentially having more impact on children than parents realize. These findings provide further support to bettering our understanding of what appropriate and problematic phone use looks like.

Exploring the role of technology in family dynamics

Some participants reported a sadness that technology might be reducing the amount of “quality time” that is spent together with others. Technology can be blamed for teens pulling away from family engagement and technology can be blamed for reducing the amount of face-to-face interaction within peer groups. However, some parents articulate that pulling away from family members towards more focus on peers is a natural part of adolescence that is not new to this generation. These parents were often more sanguine and accepting of teens’ use of devices. Some families reported finding ways to incorporate technology into family interactions to increase family enjoyment and shared quality time through having favorite shows that they watch together, sending each other Bitmojis of each other throughout the day, sharing in funny YouTube videos, etc. Such practices suggest a shift in the expression of “quality time” in families that is worth exploring further. For other families, mobile phones are central to family dynamics and are used to share communal calendars together, to track each other’s’ location, to stay connected with long-distance family members, to stay connected throughout the day. As each family develops their own mobile phone use practices, it is important to explore the broader context of family practices to better understand mobile phone effects within each family unit.

Understanding implications and origins of needing to “do something”

A recurring worry by both parents and teens includes the concern that too much technology use will lead to a sedentary lifestyle. A common injunction is that people “don’t go outside enough.” This concern becomes conflated with a sense that being online is an “empty” activity (e.g., believing that teen is not doing anything when on the phone, regardless of mobile phone activity). Parents complain that teens should “go outside and *do something*”. While teens tend to understand that they need exercise the directive to “go outside and *do something*” can often be seen as annoying if teens feel that they are “doing” a lot of things on the device. Further, tactile activities that are sedentary but not on the device (e.g., painting, reading books) are considered by parents as “doing something.” There is a sense that there is nothing to outwardly show or to measure as progress when someone is “doing something” with technology. When someone exercises, they will become more fit. When someone is reading a book, there is a visual representation of progress as the pages go by. However, when someone is using technology to “do something,” there remains the same visual cue across all forms of use. This visual cue is often one of sitting, and just looking at a screen and/or typing. This is interesting to think of ways in which technology progress could be visualized to parents and teens. For example, how might parents learn about their teens’ device usage in a way that showed teens’ progress (e.g., making and maintaining friendships, expanding knowledge of several topics, keeping up to date on homework assignments, etc.).

Experimental findings

The most important contribution my research provides is the proof of concept that interviews and baseline measurements in experimental studies of mobile phones can provide the necessary context to evaluate and interpret quantitative results from these studies. Without the incorporation of interviews and baseline measurements, the findings of this study could be interpreted that parents feel less close to their teens when mobile phone presence is high and that teens feel less close to their parents when the teen's phone is present. However, with baseline measurements of relationship quality and closeness we see a reversal of teen's experience of closeness in the presence of their mobile phone and parents and teens provide the additional qualitative context to understand why parents might report feeling less close with the presence of both phones. For example, some parents report a shift in their relationship with their teens due to adolescence. It is possible that mobile phones become a symbol of this shift as mobile phones are often provided to teenagers at the beginning of adolescence. In addition, without the added context of 242 parent-teen interviews, I would not feel as confident in the findings that mobile phone presence was not reported to significantly influence reported experiences of conversation quality and experiences of conversation partner listening for parents and teens. However, with the context of interviews, I was able to witness how parents and teens made sense of their conversation and why they believed that they did not allocate attention or negative feelings to the device if it was present.

Suggestions for Future Work

The first suggestion for future work would be to develop and implement interventions for understanding mobile phone conflict for parents and teens. Interventions

could support open communication driven by individual and family reflections of desired phone use within the home. This work could first explore how parent-teen pairs experience conflict in the home and then could work to develop conflict resolution with daily phone issues. This could also parse if the phone is a true source of conflict itself, or if addressing underlying mechanisms for conflict could reduce associations with mobile phones as the source of conflict.

The second suggestion for future work is to explore the use of grounded theory to develop metrics to better assess detrimental mobile phone use practices and influential factors contributing to poor mental and/or physical health. This work is necessary in the question of the validity of existing metrics and is necessary to provide parents and teens with the tools to assess appropriate use. This work is also necessary to develop actionable treatment models for problematic mobile phone use that are grounded with the understanding of how mobile phone addiction manifests.

Lastly, I suggest a deeper examination into adolescent reported mental health and self-esteem in relation to the negative messaging adolescents receive about their device usage. “Feeling accepted and approved by others – especially parents and peers – is the factor identified by theorists and researchers as the most important” to adolescents’ development and maintenance of self-esteem (Arnett, 2014). It is possible that repetitive experiences of rejections of adolescent motivations to use technology is more highly tied to reported reductions in adolescent mental health than the surface level interactions with devices themselves. This work could also be extended to include research on self-esteem and mental health impacts of negative messaging on adults to better understand the unintended consequences of shaming society into “digital detox.”

Key Insights

Mobile phones are a tool. They can also be articulated as an extension of the self. This makes examining and explaining their use highly complicated and sensitive in nature. As I witnessed participants report mobile phone concerns along with feelings of guilt and shame, I saw how media reports of research findings impact participants' sensemaking. With the pressure to publish "in vogue" research findings, I urge researchers to contemplate the unintended consequences of using confirmatory approaches to assess the benefits of digital detoxing. In particular, to evaluate if these measurements are assessing what was intended (e.g., reduced depression with digital detoxing) or if they are assessing predicted responses to repeated narratives in the media (e.g., the media says that phones increase depression, so if I spend time without my phone, I should feel less depressed).

Broad generalizations of "appropriate" phone use or "good" versus "bad" labeling of phone behaviors should also be shifted towards more nuanced and individualized assessments of phone use. Mobile phone ownership and activity is highly individualized and behaviors are often enacted as an extension of underlying motivations and desires. Therefore, I suggest that the assessment of use should also be tailored at this individual level. What is appropriate and even productive use for one person could be detrimental for another. In addition, assessments of mobile phone use and effects should also include appropriate baseline measurements. The inclusion of these measurements is imperative to parse effects of mobile phones from other influential variables. Without including these measurements, it is possible to misinterpret findings of mobile phone effects.

As a whole, this dissertation attempts to provide an overall reflection on the progress and history of mobile phone research as well as current interpretations of phone

use at large. Should you worry about your phone use and your family members' phone use? Maybe. But these worries should be contextualized with the qualification that phones are a tool that can provide negative *and* positive impact for individuals and families. In addition, mobile phones should be examined on an individual basis to determine how each individual can improve their own relationship to their device. As mobile phones have come to serve as extensions of self, I also suggest that mobile phone research should become more reflective of deeper motivations for use rather than surface level representations of mobile phone behaviors. As the field of psychology is nearly 140 years old and is still being explored, so too will the research with mobile phones. Until then, I hope that this dissertation illustrates the need to re-evaluate existing research methods, interpretations, and metrics of mobile phone use to avoid causing harm for individuals, families, and society at large. I also hope that this dissertation provides some relief and context to parents, teens, educators, and researchers currently concerned about mobile phone use.

REFERENCES

- Alter, A. (2017) *Irresistible: The rise of addictive technology and the business of keeping us hooked*. Penguin.
- American Psychiatric Association. 2013. *DSM 5*. American Psychiatric Association.
- Anderson, M. (2015). Technology Device Ownership: 2015. *Report of the Pew Research Center*. October 29, 2015.
- Arnett, J. J. (2014). *Adolescence and emerging adulthood*. Boston, MA: Pearson.
- Bauerlein, M. (2011). *The Digital Divide: Arguments for and Against Facebook, Google, Texting, and the Age of Social Networking*. Penguin.
- Beck, U., Giddens, A., & Lash, S. (1994). *Reflexive modernization: Politics, tradition, and aesthetics in the modern social order*. Stanford University Press.
- Berridge, K. C., & Robinson, T. E. (1998). What is the role of dopamine in reward: hedonic impact, reward learning, or incentive salience? *Brain Research Reviews*, 28, 309-369.
- Bianchi, A. & Phillips, J. G. 2005. Psychological predictors of problem mobile phone use. *CyberPsychology & Behavior* 8, 1: 39-51.
- Billieux, J., Maurage, P., Olatz Lopez-Fernandez, P. M., Kuss, D. J., & Griffiths, M.D. (2015). Can disordered mobile phone use be considered a behavioral addiction? An update on current evidence and a comprehensive model for future research. *Current Addiction Reports* 2, 2: 156-162.
- Blackwell, L., Gardiner, E., & Schoenebeck, S. (2016). Managing Expectations: Technology Tensions among Parents and Teens. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing* (pp. 1390-1401). ACM.

- Blumberg, D. 2004. Stage model of recovery for chemically dependent adolescents: Part 1- Methods and model. *Journal of Psychoactive Drugs* 36, 3: 323- 345.
- Brown, J. S., & Duguid, P. (2002). *The social life of information*. Harvard Business Press.
- Business Day Live. 2016. Long-Term Chronic Sleep Deprivation Likely To Mean Dying Younger, Says Study. Retrieved September 2016, from <http://www.bdlive.co.za/life/health/2016/09/01/long-term-chronic-sleep-deprivation-likely-to-mean-dying-younger-says-study>.
- Business Insider (2014). 3 Ways Your Smartphone Wrecks Your Sanity, Productivity, And Focus. 2014. Retrieved September 20, 2016 from <http://www.businessinsider.com/how-your-iphone-wrecks-your-sanity-productivity-and-focus-2014-3>.
- Business Insider (2017). Apple should address youth phone addiction, say two large investors. Retrieved February 27, 2018 from <http://www.businessinsider.com/r-apple-should-address-youth-phone-addiction-say-two-large-investors-2018-1>
- Carvalho, J., Francisco, R., & Relvas, A. P. (2015). Family functioning and information and communication technologies: How do they relate? A literature review. *Computers in Human Behavior*, 45, 99-108.
- Cavazotte, F., Heloisa Lemos, A., & Villadsen, K. (2014). Corporate smart phones: professionals' conscious engagement in escalating work connectivity. *New Technology, Work and Employment*, 29(1), 72-87.

Centers for Disease Control and Prevention (2017). Reproductive Health: Teen Pregnancy.

Retrieved April 12, 2018 from

<https://www.cdc.gov/teenpregnancy/about/index.htm>.

Census (2016). Educational Attainment in the United States: 2015. Retrieved April 12,

2018 from

<https://www.census.gov/content/dam/Census/library/publications/2016/demo/p20-578.pdf>.

Chen, C., Zhang, K. Z. K., Zhao, S. J., Lee, M. K.O., & Cong, T. 2016. The Impact of Mere

Exposure Effect on Smartphone Addiction. *2016 49th Hawaii International*

Conference on System Sciences (HICSS). IEEE, 2016.

Christensen, P. H. (2002). Why more 'quality time' is not on the top of children's lists: the

'qualities of time' for children¹. *Children & Society*, 16(2), 77-88.

CNBC (2018). Here are some ways to curb your smartphone addiction this year. Retrieved

April 11, 2018 from <https://www.cnbc.com/2018/01/03/how-to-curb-your-smartphone-addiction-in-2018.html>.

CNN (2018). What do smartphones and cigarettes have in common? Retrieved March 13th,

2018 from <https://www.cnn.com/2018/01/09/opinions/smartphone-addiction-opinion-spicer/index.html>.

CNN (2017). Smartphone addiction could be changing your brain. Retrieved April 9th, 2018

from <https://www.cnn.com/2017/11/30/health/smartphone-addiction-study/index.html>.

- CNN (2016). What Your Personality Says About Your Smartphone Addiction. Retrieved September 20, 2016 from <http://www.cnn.com/2016/08/08/health/personality-smartphone-addiction/>.
- CNN (2016). 50% Of Teens Self-Identified As Being “Addicted” To Their Smartphone. Retrieved September 20, 2016 from <http://www.cnn.com/2016/05/03/health/teens-cell-phone-addiction-parents/>.
- Common Sense Media (2016). New report finds teens feel addicted to their phones, causing tension at home. Retrieved April 20, 2018 from www.commonsensemedia.org/about-us/news/press-releases/new-report-finds-teens-feel-addicted-to-their-phones-causing-tension-at.
- Common Sense Media (2015). Landmark Report: U.S. Teens Use An Average of Nine Hours of Media Per Day, Tweens Use Six Hours. Retrieved March 1, 2018 from <https://www.commonsensemedia.org/about-us/news/press-releases/landmark-report-us-teens-use-an-average-of-nine-hours-of-media-per-day>.
- DataPine. 10 IT & technology buzzwords you won’t be able to avoid in 2018. Retrieved April 8th, 2018 from <https://www.datapine.com/blog/technology-buzzwords/>.
- Davenport, T. H., & Beck, J. C. (2001). *The attention economy: Understanding the new currency of business*. Harvard Business Press.
- Del Boca, F. K., & Noll, J. A. (2000). Truth or consequences: the validity of self-report data in health services research on addictions. *Addiction*, 95(11s3), 347-360.
- Fine, J. & Juni, S. 2001. Ego atrophy in substance abuse: addiction from a socio-cultural perspective. *The American journal of psychoanalysis* 61, 3: 293-304.

- Foerster, M., Roser, K., Schoeni, A., & Rösli, M. 2015. Problematic mobile phone use in adolescents: derivation of a short scale MPPUS-10. *International journal of public health* 60, 2: 277-286.
- Forbes (2018). Facebook privacy scandal hearings: What you missed. Retrieved April 16, 2018 from <https://www.forbes.com/sites/ciocentral/2018/04/16/facebook-privacy-scandal-hearings-what-you-missed/#240341487ab9>.
- Forbes (2017). Phone Addiction is Real – And So Are Its Mental Health Risks. Retrieved April 14, 2018 from <https://www.google.com/search?q=everyone+addicted+to+smartphones&oq=everyone+addicted+to+smartphones&aqs=chrome..69i57.4505j0j7&sourceid=chrome&ie=UTF-8>.
- Forbes (2017). Top 10 Trends for Digital Transformation in 2018. Retrieved April 8th, 2018 from <https://www.forbes.com/sites/danielnewman/2017/09/26/top-10-trends-for-digital-transformation-in-2018/>.
- Gee, J. P. (2010). *How to do discourse analysis: A toolkit*. Routledge.
- George, M. J., & Odgers, C. L. (2015). Seven fears and the science of how mobile technologies may be influencing adolescents in the digital age. *Perspectives on Psychological Science*, 10(6), 832-851. (George & Odgers, 2015)
- Gergen, K. (1991). *The saturated self: Dilemmas of identity in contemporary life*. Basic books.
- Gottman, J. (2014). The 3 Phase of Love. Retrieved April 11, 2018 from <https://www.gottman.com/blog/the-3-phases-of-love/>

- Greater Good Magazine (2015). How smartphones are killing conversation. Retrieved April 9th, 2018 from https://greatergood.berkeley.edu/article/item/how_smartphones_are_killing_conversation.
- Hall, J. A., Baym, N. K., & Miltner, K. M. (2014). Put down that phone and talk to me: Understanding the roles of mobile phone norm adherence and similarity in relationships. *Mobile Media & Communication*, 2(2), 134-153.
- Harmon, E. & Mazmanian, M. 2013. Stories of the Smartphone in everyday discourse: conflict, tension & instability. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, 2013.
- Hingorani, K. K., Woodard, D., & Askari-Danesh, N. (2012). Exploring how smartphones supports students' lives. *Issues in Information Systems*, 13(2), 33-40.
- Hiniker, A., Schoenebeck, S. Y., & Kientz, J.A. (2016). Not at the Dinner Table: Parents' and Children's Perspectives on Family Technology Rules. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW '16)*, 1376-1389.
- Hooper, V. & Zhou, Y. 2007. Addictive, dependent, compulsive? A study of mobile phone usage. *BLED 2007 Proceedings* 38: 272, 285.
- Huffington Post (2015). Your Iphone Is Making You Depressed. 2015. Retrieved September 20, 2016 from http://www.huffingtonpost.com/2015/02/19/phone-addiction-depression_n_6712882.html.

Huffington Post (2014). Why don't we talk anymore? Retrieved March 13th, 2018 from https://www.huffingtonpost.com/sophia-a-nelson/when-did-texting-replace-_b_5105265.html.

Ito, M., Horst, H., Bittanti, M., Boyd, D., Herr-Stephenson, B., Lange, P. G., & Robinson, L. (2008). Living and Learning with New Media: Summary of Findings from the Digital Youth Project. *John D. and Catherine T. MacArthur Foundation*.

Kaiser Family Foundation (2010). Generation M2: Media in the lives of 8- to 18- year olds. Menlo Park, CA: Author.

Kalkbrenner, J., & McCampbell, A. (2011). The Advent Of Smartphones: A Study On The Effect Of Handheld Electronics On Personal And Professional Productivity. *Journal of Applied Global Research*, 4(8).

Kelemen, G. & Erdos, M. B. 2003. The code of grace: A cultural approach to 12-step fellowship programs in Hungary. *International Journal of Self Help & Self Care* 2, 3: 187-203.

Kim, D., Lee, Y., Lee, Y., Nam, J. K. & Chung, Y. 2014. Development of Korean smartphone addiction proneness scale for youth. *PloS one* 9, 5: 1-8.

Larson, R. W., Richards, M. H., Moneta, G., Holmbeck, G., & Duckett, E. (1996). Changes in adolescents' daily interactions with their families from ages 10 to 18: Disengagement and transformation. *Developmental Psychology*, 32(4), 744.

Laursen, B., & Collins, W. A. (2004). Parent-child communication during adolescence. *The Routledge handbook of family communication*, 2, 333-348.

- Laursen, B., & Collins, W. A. (1994). Interpersonal conflict during adolescence. *Psychological bulletin*, 115(2), 197.
- Leigh, G. K., & Peterson, G. W. (1986). *Adolescents in families*. South-Western Pub. Co.
- Lopez-Fernandez, O., Honrubia-Serrano, L., Frexia-Blanxart, M. & Gibson, W. 2014. Prevalence of problematic mobile phone use in British adolescents. *CyberPsychology, Behavior, and social networking* 17, 2: 91-98.
- Harmon, E., & Mazmanian, M. (2013,). Stories of the Smartphone in everyday discourse: conflict, tension & instability. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 1051-1060). ACM.
- Larson, R. W., Richards, M. H., Moneta, G., Holmbeck, G., & Duckett, E. (1996). Changes in adolescents' daily interactions with their families from ages 10 to 18: Disengagement and transformation. *Developmental Psychology*, 32(4), 744.
- Ling, R., & McEwen, R. (2010). Mobile communication and ethics: implications of everyday actions on social order. *Etikk i praksis-Nordic Journal of Applied Ethics*, 4(2), 11-26.
- Live Science. Are Smartphones Killing Our Conversation Quality? Retrieved August, 2016 from <http://www.livescience.com/46817-smartphones-lower-conversation-quality.html>.
- Magsamen-Conrad, K., & Greene, K. (2014). Technology addiction's contribution to mental wellbeing: The positive effect of online social capital. *Computers in human behavior*, 40, 23-30.
- May, H., & Hearn, G. (2005). The mobile phone as media. *International Journal of Cultural Studies*, 8(2), 195-211.

- Mazmanian, M. & Erickson, I. 2014. The product of availability: understanding the economic underpinnings of constant connectivity. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM.
- Mazmanian, M., Orlikowski, W.J., & Yates, J. 2013. The autonomy paradox: The implications of mobile email devices for knowledge professionals. *Organization Science* 24, 5: 1337-1357.
- McDaniel, B. T., & Coyne, S. M. (2014). "Technoference": The Interference of Technology in Couple Relationships and Implications for Women's Personal and Relational Well-Being.
- Merlo, L. J., Stone, A. M., and Bibbey, A. (2013). Measuring problematic mobile phone use: development and preliminary psychometric properties of the PUMP scale. *Journal of addiction*.
- Misra, S., Cheng, L., Genevie, J., & Yuan, M. 2014. The iPhone effect: The quality of in-person social interactions in the presence of mobile devices. *Environment & Behavior*, 1-24.
- Mojtabai, R., Olfson, M., & Han, B. (2016). National trends in the prevalence and treatment of depression in adolescents and young adults. *Pediatrics*, e20161878.
- Newcomb, T. M. (1953). An approach to the study of communicative acts. *Psychological review*, 60(6), 393.
- New York Daily News. Your cell phone is ruining your relationship — just by being in the room: study. Retrieved August, 2016 from <http://www.nydailynews.com/life-style/health/cell-phone-ruining-relationship-room-study-article-1.1153350>.

- Nielsen (2017). Mobile Kids: The Parent, the Child and the Smartphone. Retrieved March 1, 2018 from http://www.nielsen.com/us/en/insights/news/2017/mobile-kids--the-parent-the-child-and-the-smartphone.html?afflt=ntrt15340001&afflt_uid=Sb-XPW4e6x8.H8GiXCbizHGJryethJ4cpiML7rsy7qxa&afflt_uid_2=AFFLT_ID_2.
- NPR (2017). How smartphones are making kids unhappy. Retrieved April 9th, 2018 from <https://www.npr.org/sections/health-shots/2017/08/07/542016165/how-smartphones-are-making-kids-unhappy>.
- Olson, J. S., & Kellogg, W. A. (2014). *Ways of Knowing in HCI*. Springer, New York, NY.
- Our World in Data (2017). Global Extreme Poverty. Retrieved April 12, 2018 from <https://ourworldindata.org/extreme-poverty>.
- Panova, T., & Lleras, A. (2016). Avoidance or boredom: Negative mental health outcomes associated with use of Information and Communication Technologies depend on users' motivations. *Computers in Human Behavior*, 58, 249-258.
- Patil, S., Norcie, G., Kapadia, A., & Lee, A. J. (2012, July). Reasons, rewards, regrets: privacy considerations in location sharing as an interactive practice. In *Proceedings of the Eighth Symposium on Usable Privacy and Security* (p. 5). ACM.
- PCMag. How to wean yourself off smartphones and social media. Retrieved April 18th, 2018 from <https://www.pcmag.com/feature/360420/how-to-wean-yourself-off-smartphones-and-social-media>
- Pew Research Center (2018). 5 facts about crime in the U.S. Retrieved April 12, 2018 from <http://www.pewresearch.org/fact-tank/2018/01/30/5-facts-about-crime-in-the-u-s/>.

Pew Research Center (2018). Mobile Fact Sheet. Report of the Pew Research Center.

Retrieved March 1, 2018 from <http://www.pewinternet.org/fact-sheet/mobile/>.

Pew Research Center. 2015. Technology Device Ownership: 2015. *Report of the Pew*

Research Center. Retrieved September 20, 2016 from

<http://www.pewinternet.org/2015/10/29/technology-device-ownership-2015/>.

Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the horizon*, 9(5), 1-6.

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of management*, 12(4), 531-544.

PsychCentral. How your smartphone is ruining your health. Retrieved April 9th, 2018 from

<https://psychcentral.com/lib/how-your-smartphone-is-ruining-your-health/>.

Psychology Dictionary. Internalization. Retrieved April 18th, 2018 from

<https://psychologydictionary.org/internalization/>.

Przybylski, A.K. & Weinstein, N. 2013. Can you connect with me now? How the presence of

mobile communication technology influences face-to-face conversation quality. *J*

Social & Personal Relationships, 30: 237-246.

Radesky, J. S., Kistin, C. J., Zuckerman, B., Nitzberg, K., Gross, J., Kaplan-Sanoff, M., &

Silverstein, M. (2014). Patterns of mobile device use by caregivers and children

during meals in fast food restaurants. *Pediatrics*, 133(4), e843-e849.

Random Name Generator. Retrieved March 13th, 2018 from [http://random-name-](http://random-name-generator.info/random/?n=10&g=3&st=2)

[generator.info/random/?n=10&g=3&st=2](http://random-name-generator.info/random/?n=10&g=3&st=2).

- Roberts, J.A. & David, M.E. 2016. My life has become a major distraction from my cell phone: Partner phubbing and relationship satisfaction among romantic partners. *Computers in Human Behavior* 54: 134-141.
- Roberts, J.A., Pullig, C., & Manolis, C. 2015. I need my smartphone: A hierarchical model of personality and cell-phone addiction. *Personality and Individual Differences* 79: 13-19.
- Roberts, J., Yaya, L., & Manolis, C. 2014. The invisible addiction: Cell-phone activities and addiction among male and female college students. *Journal of behavioral addictions* 3, 4: 254-265.
- Sapacz, M., Rockman, G. & Clark, J. 2016. Are we addicted to our cell phones?. *Computers in Human Behavior* 57: 153-159.
- Santrock, J. W. (2005). *Adolescence: John W. Santrock*. Boston: McGraw-Hill.
- Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American psychologist*, 54(2), 93.
- Scientific American. How Your Cell Phone Hurts Your Relationships. Retrieved August 2016, from <http://www.scientificamerican.com/article/how-your-cell-phone-hurts-your-relationships/>.
- Smallwood, J., & Schooler, J. W. (2006). The restless mind. *Psychological bulletin*, 132(6), 946.
- Smetaniuk, P. 2014. A preliminary investigation into the prevalence and prediction of problematic cell phone use. *Journal of behavioral addictions* 3, 1: 41-53.

- Statista (2017). Number of apps available in leading app stores as of March 2017. Retrieved April 12, 2018 from <https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/>.
- Stothart, C., Mitchum, A., & Yehnert, C. (2015). The attentional cost of receiving a cell phone notification. *Journal of experimental psychology: human perception and performance*, 41(4), 893.
- Suchman, L. A. (1987). Plans and situated actions: The problem of human-machine communication. Cambridge university press.
- Sudman, S., Bradburn, N. M., Schwarz, N., & Gullickson, T. (1997). Thinking about answers: The application of cognitive processes to survey methodology. *Psychocritiques*, 42(7), 652.
- Tams, S., Thatcher, J., Grover, V., & Pak, R. (2015). Selective attention as a protagonist in contemporary workplace stress: implications for the interruption age. *Anxiety, Stress, & Coping*, 28(6), 663-686.
- Tech Times (2015). Heavy Smartphone Use Can Lead to Depression, Anxiety. Retrieved September 20, 2016 from <http://www.techtimes.com/articles/138483/20160305/heavy-smartphone-use-can-lead-to-depression-anxiety.htm>.
- Tennov, D. (1998). Love and limerence: The experience of being in love. Scarborough House.
- The Independent (2017). How your smartphone is ruining your life. Retrieved April 9th, 2018 from <https://www.independent.co.uk/life-style/smartphones-ruin-life-ways-sleep-dating-sex-social-media-whatsapp-messaging-a7882031.html>

The Telegraph (2009). Internet and mobile phones are 'damaging education.' Retrieved March 13th, 2018 from

<https://www.telegraph.co.uk/education/6163309/Internet-and-mobile-phones-are-damaging-education.html>.

The Wall Street Journal (2018). iPhones and children are a toxic pair, say two big Apple investors. Retrieved April 9th, 2018 from <https://www.wsj.com/articles/iphones-and-children-are-a-toxic-pair-say-two-big-apple-investors-1515358834>

The Wall Street Journal (2017). How smartphones hijack our minds. Retrieved April 9th, 2018 from <https://www.wsj.com/articles/how-smartphones-hijack-our-minds-1507307811>.

The Washington Post (2017). Teenage depression and suicide are way up – and so is smartphone use.

TIME (2018). You're addicted to your smartphone. This company thinks it can change that. Retrieved April 18th, 2018 from <http://time.com/5237434/youre-addicted-to-your-smartphone-this-company-thinks-it-can-change-that/>.

Turkle, S. (2015). *Reclaiming conversation*. Penguin Press: New York, NY.

Turkle, S. (2011). *Alone together: Why we expect more from technology and less from each other*. Basic books: New York, NY.

Turkle, S. (2011). *Evocative objects: Things we think with*. MIT press.

Twenge, J. M. (2017). Have Smartphones Destroyed a Generation. The Atlantic.

- Twenge, J. M. (2017). *IGen: Why Today's Super-connected Kids are Growing Up Less Rebellious, More Tolerant, Less Happy--and Completely Unprepared for Adulthood--and what that Means for the Rest of Us*. Simon and Schuster.
- Vaghefi, I., & Lapointe, L. (2014, January). When Too Much Usage is Too Much: Exploring the Process of IT Addiction. In *System Sciences (HICSS), 2014 47th Hawaii International Conference on* (pp. 4494-4503). IEEE.
- Wait Until 8th. Retrieved February 27, 2018 from <https://www.waituntil8th.org/>.
- Wall Street Journal (2018). iPhones and children are a toxic pair, say two big Apple Investors. Retrieved February 27, 2018 from <https://www.wsj.com/articles/iphones-and-children-are-a-toxic-pair-say-two-big-apple-investors-1515358834>.
- Walsh, S. P., White, K. M., & McD Young, R. (2010). Needing to connect: The effect of self and others on young people's involvement with their mobile phones. *Australian Journal of Psychology*, 62(4), 194-203.
- Washington Post (2018). Teenage depression and suicide are way –and so is smartphone use. Retrieved February 27, 2018 from https://www.washingtonpost.com/national/health-science/teenage-depression-and-suicide-are-way-up--and-so-is-smartphone-use/2017/11/17/624641ea-ca13-11e7-8321-481fd63f174d_story.html?utm_term=.996283e40d2d.
- Weiner, B. (Ed.). (1974). *Achievement motivation and attribution theory*. General Learning Press.

Wired (2009). June 29, 2007: iPhone, you phone, we all want an iPhone. Retrieved April 18th, 2018 from <https://www.wired.com/2009/06/dayintech-0629/>.

Yardi, S. & Bruckman, A. (2011). Social and technical challenges in parenting teens' social media use. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*: 3237-3246. <https://doi.org/10.1145/1978942.1979422>

APPENDIX A

APPENDIX A: DIFFERENCES/SIMILARITIES BETWEEN PREVIOUS WORKS

PROCEDURES

Przybyski/Weinstein 1 (2012)	Przybyski/Weinstein 2 (2012)	Misra et al (2014)	Lanette (2018)
74 participants	68 participants	200 participants (29 dyads w/mobile device; 71 dyads without)	Age – adolescents: 12-19 yrs (20 dyads per condition)
Dyads	Dyads	Dyads	Dyads
Laboratory	Laboratory	Coffee Shop	Laboratory
Ten minutes	Ten minutes	Ten minutes	Ten minutes
		Asked upon entering if they would be interested in participating in a “study about the nature of social interactions in coffee shops”	Demographics questionnaire including present mood
		Once drinks were ordered, participants were asked to sit at a two person table and a confederate observed.	
Two conditions: (1) Phone absent (2) Phone present	Two by two conditions: (1) Casual content (2) Meaningful content WITH (3) Phone absent (4) Phone present	Four conditions: (5) Casual content w/phone present (6) Casual content w/o phone (7) Meaningful content w/phone (8) Meaningful w/o phone	Five conditions: (1) No Phones (2) Parent’s phone present (3) Teen’s phone present (4) Both phone’s Present (5) Stranger’s phone present

Modified version of relationship formation task adapted from previous research meant to emulate the content of many-real life conversations: "Discuss an interesting event that occurred to you over the past month"	Modified version of relationship formation task adapted from previous research meant to emulate the content of many-real life conversations: (1) plastic holiday trees (2) most meaningful events of the past year	Modified version of relationship formation task adapted from previous research meant to emulate the content of many-real life conversations: (1) plastic holiday trees (2) most meaningful events of the past year Content of conversations was NOT recorded ONLY non-verbal behavior was observed and noted. Did either participant put a mobile device on the table or hold it in their hand. Five minute survey	Modified version of relationship formation task adapted from previous research meant to emulate the content of many-real life conversations: "most meaningful events of the past year"
Dependent measures	Dependent measures		Interactions recorded (audio/video) Dependent measures (Two questionnaires)
Funneled debriefing to see if mobile phone placement was unobtrusive			Interviews Debriefing

INDEPENDENT VARIABLES

Przybyski/Weinstein 1	Przybyski/Weinstein 2	Misra et al	Dissertation
Presence of mobile device	Presence of mobile device Type of conversation (casual/meaningful)	Presence of mobile device Type of conversation (casual/meaningful)	Presence of mobile device

DEPENDENT VARIABLES

Przybyski/Weinstein 1	Przybyski/Weinstein 2	Misra et al	Dissertation
Conversation partner	Conversation	Connectedness (six	Conversation

closeness (Inclusion of Other in Self Scale – 1 not close at all to 7 extremely close)	partner closeness (Inclusion of Other in Self Scale – 1 not close at all to 7 extremely close)	item version of the connectedness subscale of the Intrinsic Motivation Inventory)	partner closeness (Inclusion of Other in Self Scale – 1 not close at all to 7 extremely close)
Relationship quality (seven-item version of the connectedness subscale of the Intrinsic Motivation Inventory)	Relationship quality (seven-item version of the connectedness subscale of the Intrinsic Motivation Inventory)	Empathetic Concern (eight-item Empathic Concern Scale)	Conversation quality (six item version of the connectedness subscale of the Intrinsic Motivation Inventory)
	Partner empathy (nine-item Empathic Concern Scale)		Empathic concern in the moment (six-item Team Listening Environment measure)
	Partner Trust (rate one item “I felt like I could really trust my conversation partner”)		Trust present in other questionnaires.

CONTROL VARIABLES

Przybyski/Weinstein 1

Age
Gender

Affect (nine-item Emmons Mood Indicator)

Przybyski/ Weinstein 2

Age
Gender

Affect (nine-item Emmons Mood Indicator)

Misra et al

Age
Gender
Ethnicity

Affect (nine-item Emmons Mood Indicator)
Conversation partner closeness (Inclusion of Other in Self Scale – 1 not close at all to 7 extremely close)

Dissertation

Age
Gender

Parent Vs Teen Affect (nine-item Emmons Mood Indicator)
Connectedness (six item version of the connectedness subscale of the Intrinsic Motivation Inventory in the past week; Inclusion of Other in Self in the Past Week)

APPENDIX B: EXPERIMENTAL PROTOCOL

N = 100 dyads; 20 dyads per cell (determined through power analysis of the average effect size of previous studies)

Location:

University of California, Irvine

Informed consent and pre-study questionnaire: Hana Lab conference room

Parent-teen conversation and post-study questionnaire: Hana Lab dyad room

Interviews: separate Hana Lab dyad rooms

Duration:

Informed consent and pre-study questionnaire: 20 minutes

Parent-teen conversation: 10 minutes

Post-study questionnaire: 15 minutes

Interviews: 30 minutes

Total: 1 hour 15 minutes

Protocol:

---PRE EXPERIMENT ---

- (1) Participants individually fill out pre-study questionnaire (demographics – age, gender, ethnicity, location, number of siblings, income; pre-mood before the conversation)

---EXPERIMENT---

(3) Participants randomly assigned to one of four groups:

Group 1: no cell phone

Participants are asked to leave all belongings in room where informed consent is obtained and led into side room. We tell participants that we will *enter the room* when the conversation is over.

Group two: parent has cell phone

Parent is asked to bring their cell phone (leave all other belongings in room where informed consent is obtained) and participants are led into side room. We tell participants that we will *text parent* when the conversation is over.

Group three: teen has cell phone

Teen is asked to bring their cell phone (leave all other belongings in room where informed consent is obtained) and participants are led into side room. We tell participants that we will *text teen* when the conversation is over.

Group four: both parent and teen have cell phone

Participants are asked to bring their cell phones (leave all other belongings in room where informed consent is obtained) and participants are led into side room. We tell participants that we will *text them* when the conversation is over.

Group five: stranger phone present

Participants are asked to leave all belongings in room where informed consent is obtained and led into side room where a stranger's phone is present on the conversation table. We tell participants that we will *enter the room* when the conversation is over.

(4) Participants are instructed to discuss the most meaningful events of the past year.

(5) After ten minutes, experimenter ends the conversation by either entering the room or texting and then entering the room.

(6) Participants are individually given post-conversation questionnaires

(7) Participants individually interviewed about the experiment and broader experiences with mobile phones within the family

APPENDIX C: EXPERIMENTAL QUESTIONNAIRES

NOTE: Questionnaires minimized in size

(1) PRE-PARENT QUESTIONNAIRE

Pre-Questionnaire

Please fill in the following blanks:

Cell phone number: _____

Zip code: _____

Age: _____

Gender: _____

Ethnicity: _____

Marital status: _____

List of children/step children (include child age and living arrangement)

Example: Daughter, 15 years old, lives with me 50% and with ex spouse 50%

1. _____

2. _____

3. _____

4. _____

Additional children:

Approximate family yearly income: _____

--TURN OVER--

For each question below, please circle the response that best characterizes how you feel right now, where 1 = not at all and 7 = extremely.

Currently, I am:

	Not at all			Neutral			Extremely
Joyful	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Pleased	1	2	3	4	5	6	7
Having fun	1	2	3	4	5	6	7
Worried/anxious	1	2	3	4	5	6	7
Depressed	1	2	3	4	5	6	7
Frustrated	1	2	3	4	5	6	7
Angry/hostile	1	2	3	4	5	6	7
Unhappy	1	2	3	4	5	6	7

(2) POST-PARENT QUESTIONNAIRE

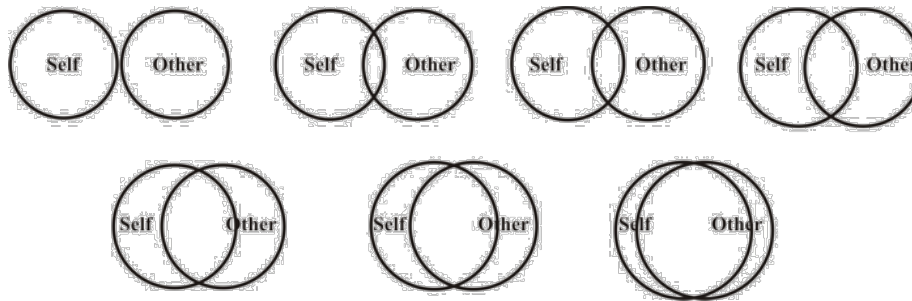
Post-Questionnaire-Parent

For each question below, please circle the response that best characterizes how you felt about your child *during your conversation* about the past year, where 1 = not at all true and 7 = very true.

During our conversation:

	Not at all true			Neutral			Very true
I felt connected to my child	1	2	3	4	5	6	7
I felt close to my child	1	2	3	4	5	6	7
I felt distant to my child	1	2	3	4	5	6	7
I felt like I wanted a chance to interact with my child more often	1	2	3	4	5	6	7
I felt like my child and I could become closer if we interacted more	1	2	3	4	5	6	7
I felt I could really trust my child	1	2	3	4	5	6	7

Please circle the picture that best describes how you felt about your relationship with your child *during your conversation*:



For each question below, please circle the response that best characterizes how you felt about your child *during your conversation* about the past year, where 1 = not at all true and 7 = very true.

During our conversation, I felt that my child:

	Not at all true			Neutral			Very true
Genuinely wanted to hear my point of view	1	2	3	4	5	6	7
Showed me that they understood what I said	1	2	3	4	5	6	7
Listened to what I had to say	1	2	3	4	5	6	7
Understood me	1	2	3	4	5	6	7
Seemed to be attentive to what I had to say	1	2	3	4	5	6	7
Paid attention to me	1	2	3	4	5	6	7

For each question below, please circle the response that best characterizes how you feel right now, where 1 = not at all and 7 = extremely.

Currently, I am:

	Not at all			Neutral			Extremely
Joyful	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Pleased	1	2	3	4	5	6	7
Having fun	1	2	3	4	5	6	7
Worried/anxious	1	2	3	4	5	6	7
Depressed	1	2	3	4	5	6	7
Frustrated	1	2	3	4	5	6	7
Angry/hostile	1	2	3	4	5	6	7
Unhappy	1	2	3	4	5	6	7

What did you think this study was about?

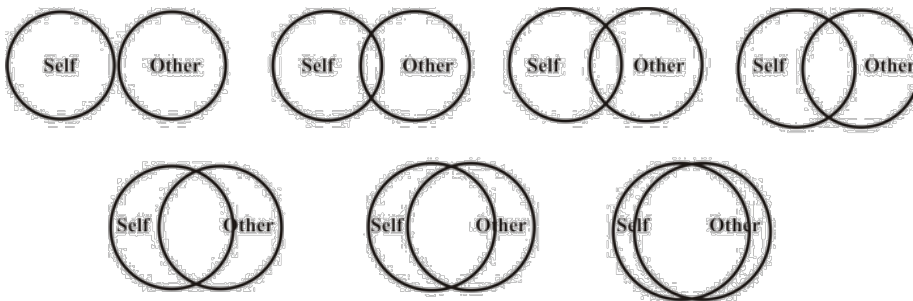
- (1) For the following questions, please think of your relationship with a different family member of your choice. Who will you think about? _____

Thinking about this relative, for each question below, please circle the response that best characterizes how you felt about your relative *during the past week*, where 1 = not at all true and 7 = very true.

During the past week:

	Not at all true			Neutral			Very true
I felt connected to my relative	1	2	3	4	5	6	7
I felt close to my relative	1	2	3	4	5	6	7
I felt distant to my relative	1	2	3	4	5	6	7
I wanted a chance to interact with my relative more often.	1	2	3	4	5	6	7
I felt like my relative and I could become closer if we interacted a lot.	1	2	3	4	5	6	7
I felt I could really trust my relative	1	2	3	4	5	6	7

Please circle the picture that best describes your relationship with your relative *during the past week*:



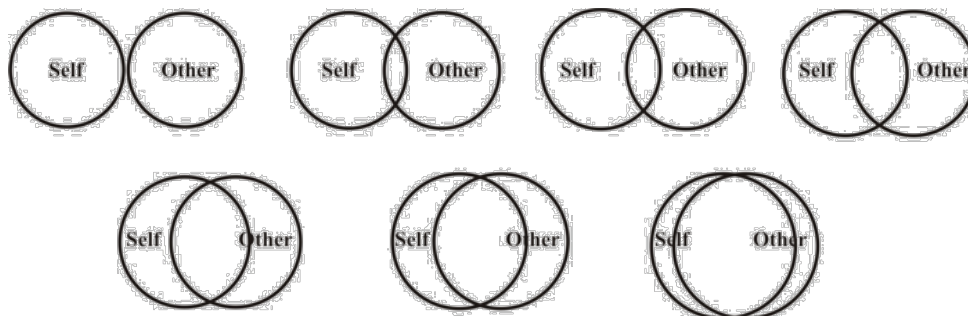
- (2) For the following questions, please think of your relationship with a friend of your choice. Who will you think about?

Thinking about this friend, for each question below, please circle the response that best characterizes how you felt about your friend *during the past week*, where 1 = not at all true and 7 = very true.

During the past week:

	Not at all true			Neutral			Very true
I felt connected to my friend	1	2	3	4	5	6	7
I felt close to my friend	1	2	3	4	5	6	7
I felt distant to my friend	1	2	3	4	5	6	7
I wanted a chance to interact with my friend more often.	1	2	3	4	5	6	7
I felt like my friend and I could become closer if we interacted a lot.	1	2	3	4	5	6	7
I felt I could really trust my friend	1	2	3	4	5	6	7

Please circle the picture that best describes your relationship with your friend *during the past week*:



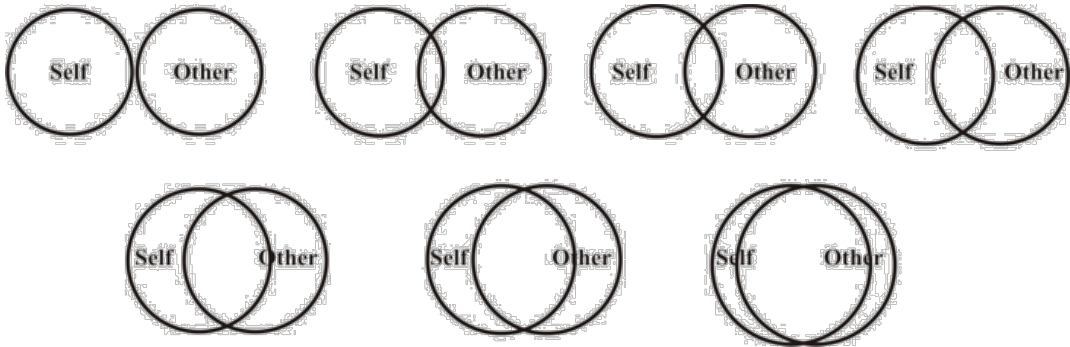
(3) For the following questions, please think of your relationship with the child you did this study with.

Thinking about this child, for each question below, please circle the response that best characterizes how you felt about your child *during the past week*, where 1 = not at all true and 7 = very true.

During the past week:

	Not at all true			Neutral			Very true
I felt connected to my child	1	2	3	4	5	6	7
I felt close to my child	1	2	3	4	5	6	7
I felt distant to my child	1	2	3	4	5	6	7
I wanted a chance to interact with my child more often.	1	2	3	4	5	6	7
I felt like my child and I could become closer if we interacted a lot.	1	2	3	4	5	6	7
I felt I could really trust my child	1	2	3	4	5	6	7

Please circle the picture that best describes how you felt about your relationship with your child *during the past week*:



For each question below, please circle the response that best characterizes how often you feel the following statements occur with the child you did this study with, where 1 = never and 7 = all the time.

	Never			Some- times			Always
During a typical mealtime that my child and I spend together, my child pulls out and checks his/her cell phone.	1	2	3	4	5	6	7
My child places his or her cell phone where he/she can see it when we are together.	1	2	3	4	5	6	7
My child keeps his or her cell phone in their hand when he or she is with me.	1	2	3	4	5	6	7
When my child's cell phone rings or beeps, he/she pulls it out even if we are in the middle of a conversation.	1	2	3	4	5	6	7
My child glances at his/her cell phone when talking to me.	1	2	3	4	5	6	7
During leisure time that my child and I are able to spend together, my child uses his/her cell phone.	1	2	3	4	5	6	7
My child does not use his or her phone when we are talking.	1	2	3	4	5	6	7
My child uses his or her cell phone when we are out together.	1	2	3	4	5	6	7
If there is a lull in our conversation, my child will check his or her cell phone.	1	2	3	4	5	6	7

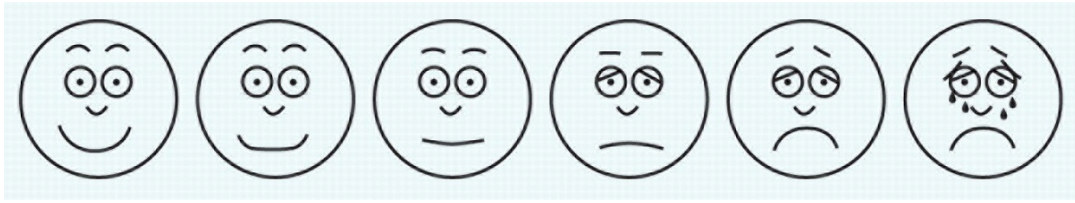
For each question below, please circle the response that best characterizes how strongly you agree with the following statements, where 1 = not at all true 7 = very true.

	Not at all true			Neutral			Very true
I get agitated when my cell phone is not in sight.	1	2	3	4	5	6	7
I get nervous when my cell phone's battery is almost exhausted.	1	2	3	4	5	6	7
I spend more time than I should on my cell phone.	1	2	3	4	5	6	7
I find that I am spending more and more time on my cell phone.	1	2	3	4	5	6	7

I feel comfortable using my cell phone.	1	2	3	4	5	6	7

NEXT PAGE

Please circle the face(s) below to best describe how you feel about your phone:



Please describe why you circled the face(s) above:

(3) PRE-TEEN QUESTIONNAIRE

Pre-Questionnaire

Please fill in the following blanks:

Cell phone number: _____

Age: _____

Gender: _____

Ethnicity: _____

Please describe your living arrangement (who you live with including gender, age, and relationship to you)

Example:

Living Arrangement 1: Mom, Brother (12 years old), Me. 50% of my time.

Living Arrangement 2: Dad, Step Mom, Brother (12 Years old), Half Sister (5 years old), Me. 50% of my time.

Living Arrangement 1:

Living Arrangement 2:

Additional living arrangement:

--TURN OVER--

For each question below, please circle the response that best characterizes how you feel right now, where 1 = not at all and 7 = extremely.

Currently, I am:

	Not at all			Neutral			Extremely
Joyful	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Pleased	1	2	3	4	5	6	7
Having fun	1	2	3	4	5	6	7
Worried/anxious	1	2	3	4	5	6	7
Depressed	1	2	3	4	5	6	7
Frustrated	1	2	3	4	5	6	7
Angry/hostile	1	2	3	4	5	6	7
Unhappy	1	2	3	4	5	6	7

(4) POST-TEEN QUESTIONNAIRE

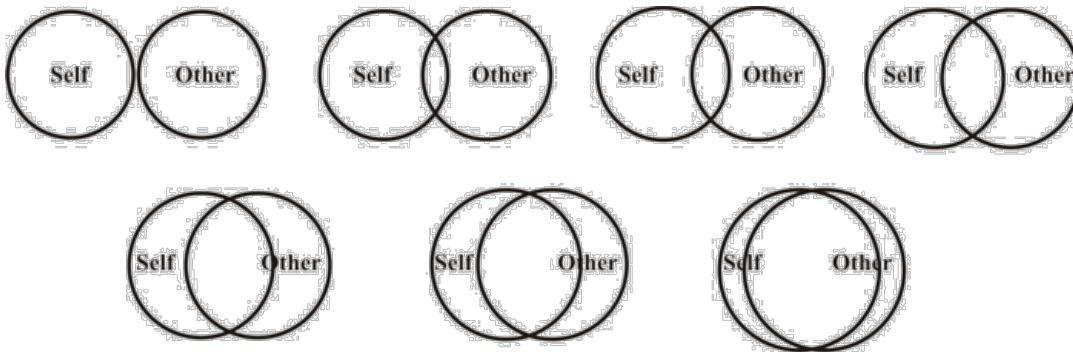
Post-Questionnaire Teen

For each question below, please circle the response that best characterizes how you felt about your parent *during your conversation* about the past year, where 1 = not at all true and 7 = very true.

During our conversation:

	Not at all true			Neutral			Very true
I felt connected to my parent	1	2	3	4	5	6	7
I felt close to my parent	1	2	3	4	5	6	7
I felt distant to my parent	1	2	3	4	5	6	7
I felt like I wanted a chance to interact with my parent more often	1	2	3	4	5	6	7
I felt like my parent and I could become closer if we interacted more	1	2	3	4	5	6	7
I felt I could really trust my parent	1	2	3	4	5	6	7

Please circle the picture that best describes how you felt about your relationship with your parent *during your conversation*:



For each question below, please circle the response that best characterizes how you felt about your parent *during your conversation* about the past year, where 1 = not at all true and 7 = very true.

During our conversation, I felt that my parent:

	Not at all true			Neutral			Very true
Genuinely wanted to hear my point of view	1	2	3	4	5	6	7
Showed me that they understood what I said	1	2	3	4	5	6	7
Listened to what I had to say	1	2	3	4	5	6	7
Understood me	1	2	3	4	5	6	7
Seemed to be attentive to what I had to say	1	2	3	4	5	6	7
Paid attention to me	1	2	3	4	5	6	7

For each question below, please circle the response that best characterizes how you feel right now, where 1 = not at all and 7 = extremely.

Currently, I am:

	Not at all			Neutral			Extremely
Joyful	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Pleased	1	2	3	4	5	6	7
Having fun	1	2	3	4	5	6	7
Worried/anxious	1	2	3	4	5	6	7
Depressed	1	2	3	4	5	6	7
Frustrated	1	2	3	4	5	6	7
Angry/hostile	1	2	3	4	5	6	7
Unhappy	1	2	3	4	5	6	7

What did you think this study was about?

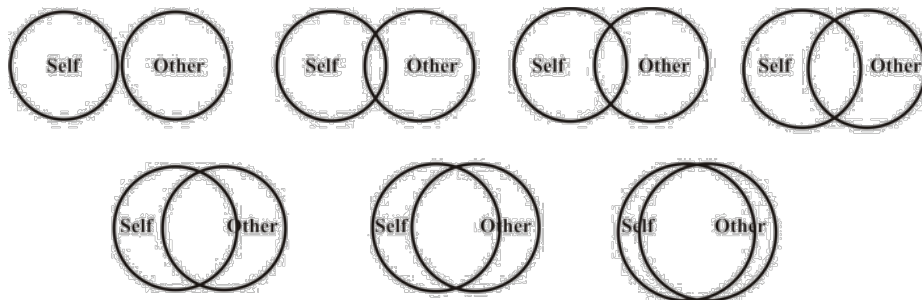
- (5) For the following questions, please think of your relationship with a different family member of your choice. Who will you think about? _____

Thinking about this relative, for each question below, please circle the response that best characterizes how you felt about your relative *during the past week*, where 1 = not at all true and 7 = very true.

During the past week:

	Not at all true			Neutral			Very true
I felt connected to my relative	1	2	3	4	5	6	7
I felt close to my relative	1	2	3	4	5	6	7
I felt distant to my relative	1	2	3	4	5	6	7
I wanted a chance to interact with my relative more often.	1	2	3	4	5	6	7
I felt like my relative and I could become closer if we interacted a lot.	1	2	3	4	5	6	7
I felt I could really trust my relative	1	2	3	4	5	6	7

Please circle the picture that best describes your relationship with your relative *during the past week*:



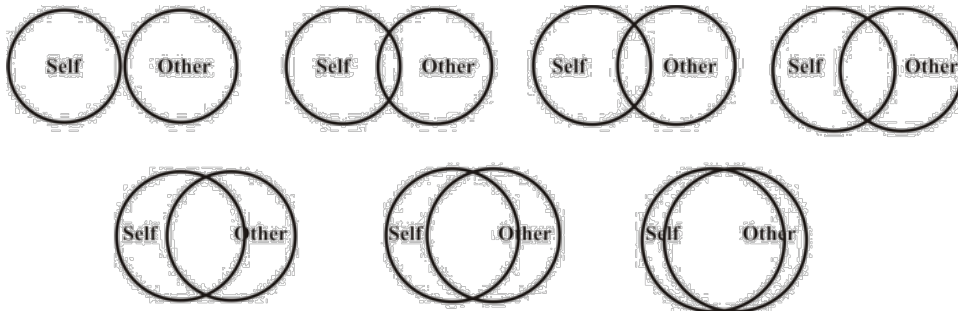
- (6) For the following questions, please think of your relationship with a friend of your choice. Who will you think about?

Thinking about this friend, for each question below, please circle the response that best characterizes how you felt about your friend *during the past week*, where 1 = not at all true and 7 = very true.

During the past week:

	Not at all true			Neutral			Very true
I felt connected to my friend	1	2	3	4	5	6	7
I felt close to my friend	1	2	3	4	5	6	7
I felt distant to my friend	1	2	3	4	5	6	7
I wanted a chance to interact with my friend more often.	1	2	3	4	5	6	7
I felt like my friend and I could become closer if we interacted a lot.	1	2	3	4	5	6	7
I felt I could really trust my friend	1	2	3	4	5	6	7

Please circle the picture that best describes your relationship with your friend *during the past week*:



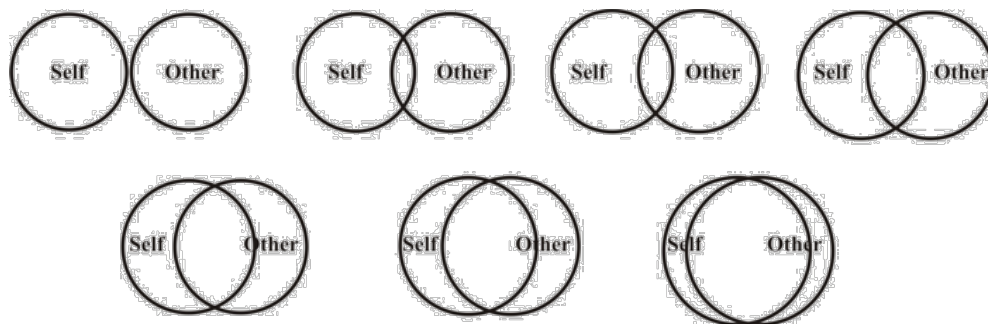
(7) For the following questions, please think of your relationship with the parent you did this study with.

Thinking about this parent, for each question below, please circle the response that best characterizes how you felt about your parent *during the past week*, where 1 = not at all true and 7 = very true.

During the past week:

	Not at all true			Neutral			Very true
I felt connected to my parent	1	2	3	4	5	6	7
I felt close to my parent	1	2	3	4	5	6	7
I felt distant to my parent	1	2	3	4	5	6	7
I wanted a chance to interact with my parent more often.	1	2	3	4	5	6	7
I felt like my parent and I could become closer if we interacted a lot.	1	2	3	4	5	6	7
I felt I could really trust my parent	1	2	3	4	5	6	7

Please circle the picture that best describes how you felt about your relationship with your parent *during the past week*:



For each question below, please circle the response that best characterizes how often you feel the following statements occur with the parent you did this study with, where 1 = never and 7 = all the time.

	Never			Some- times			Always
During a typical mealtime that my parent and I spend together, my parent pulls out and checks his/her cell phone.	1	2	3	4	5	6	7
My parent places his or her cell phone where he/she can see it when we are together.	1	2	3	4	5	6	7
My parent keeps his or her cell phone in their hand when he or she is with me.	1	2	3	4	5	6	7
When my parent's cell phone rings or beeps, he/she pulls it out even if we are in the middle of a conversation.	1	2	3	4	5	6	7
My parent glances at his/her cell phone when talking to me.	1	2	3	4	5	6	7
During leisure time that my parent and I are able to spend together, my parent uses his/her cell phone.	1	2	3	4	5	6	7
My parent does not use his or her phone when we are talking.	1	2	3	4	5	6	7
My parent uses his or her cell phone when we are out together.	1	2	3	4	5	6	7
If there is a lull in our conversation, my parent will check his or her cell phone.	1	2	3	4	5	6	7

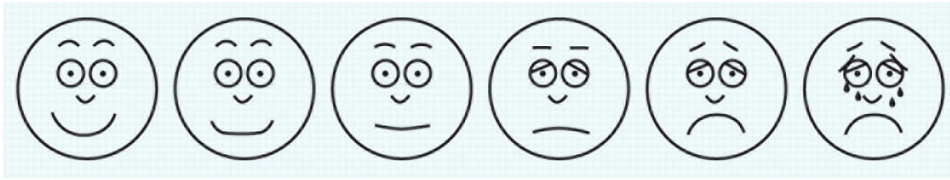
For each question below, please circle the response that best characterizes how strongly you agree with the following statements, where 1 = not at all true 7 = very true.

I find that I am spending more and more time on my cell phone.	1	2	3	4	5	6	7
I feel comfortable using my cell phone.	1	2	3	4	5	6	7

I find that I am spending more and more time on my cell phone.	1	2	3	4	5	6	7
I feel comfortable using my cell phone.	1	2	3	4	5	6	7

NEXT PAGE

Please circle the face(s) below to best describe how you feel about your phone:



Please describe why you circled the face(s) above:

APPENDIX D: INTERVIEW CODEBOOK

Codes (definitions located on page 262)

1. Experiment

- 1.1 Conversation
- 1.2 Phone
- 1.3 Questions
 - 1.3.1 Challenges

2. Concerns

- 2.1 Addiction
 - 2.1.1 Neutral
 - 2.1.1.1 Unqualified
 - 2.1.1.2 Ambivalent
 - 2.1.1.3 Technical
- 2.2 Can stop
- 2.3 Concern
- 2.4 Guilt
- 2.5 Shame
- 2.6 Media
- 2.7 Schools
- 2.8 Authority figure

3. Conflict

- 3.1 Origin
 - 3.1.1 Communication
 - 1.1.1.1 Family time
 - 3.1.2 Activity
 - 3.1.2.1 Homework
 - 3.1.2.2 Chores
 - 3.1.2.3 Do something
- 3.2 Frustration
 - 3.2.1 Expressed
 - 3.2.2 Internalized
 - 3.2.3 Repetitive
 - 3.2.4 Empathy
- 3.2 Process
 - 3.2.1 Agreement
 - 3.2.2 Disagreement

4. Positives

Definitions

1. Experiment: any reference to participants' experience during the experimental portion of the study.

1.1 Conversation: any description of participants' experience during the conversation

1.2 Phone: any description of mobile presence or absence during the conversation and/or comparisons to mobile phone presence or absence outside of the conversation

1.3 Questions: any description of participants' interpretations of survey questions

1.3.1 Challenges: any description of participants' challenges with survey questions

2. Concerns: any reference to participants' experience of concerns around mobile phones for themselves, others, and society

2.1 Addiction: any use of addiction language in reference to mobile phone use, others' mobile phone use, society's phone use, or attitudes/feelings around mobile phones. Including, direct use of addiction vocabulary such as "addiction," "addicting," and "addicted" as well as related language such as "obsessed" and "obsession." Also including addiction language to insist that one does not have a problem.

2.1.1 Neutral: any reference to phone use without use of addiction concerned language

2.1.1.1 Unqualified: positive reference to phone use without a reference to addiction concerns

2.1.1.2 Ambivalent: ambivalent or negative reference to phone use without a reference to addiction concerns

2.1.1.3 Technical: reference to phone use centers around technical issues rather than positive, negatives, or addiction concerns

2.2 Can stop: any use of the language pattern: "I can stop/be without it whenever I want," to describe phone use or attitudes/feelings towards use.

2.3 Concern: any use of concerned or fearful language to describe phone use or attitudes/feelings towards use similar to language pattern: "I am concerned about my use and the use of others"

2.4 Guilt: any reference to feelings of guilt around mobile phone use

2.5 Shame: any reference to feelings of shame around mobile phone use

2.6 Media: any reference to the media

2.7 Schools: any reference to schools

2.8 Authority figure: any reference to authority figures such as police department, school principals, pediatrics associations

3. Conflict: any reference to participants' experience of conflict around mobile phones in the family

3.1 Origin: any reference to participants' interpretation of conflict origin

3.1.1 Communication: any description of conflict in reference to interpersonal communication

1.1.1.1 Family time: any description of conflict in reference to family time

3.1.2 Activity: any description of conflict in reference to other activities

3.1.2.1 Homework: any description of conflict in reference to homework

3.1.2.2 Chores: any description of conflict in reference to chores

3.1.2.3 Do something: any description of conflict in reference to "doing something"

3.2 Frustration: any description of conflict in reference to experienced frustrations

3.2.1 Expressed: any description of how, when, and why frustrations are expressed

3.2.2 Internalized: any description of how, when, and why frustrations are not expressed but internalized

3.2.3 Repetitive: any description of frustrations in reference to repeated frustrations

3.2.4 Empathy: any description of frustrations in reference to empathy felt, experienced, or enacted

3.2 Process: any description of conflict in reference to the conflict process

3.2.1 Agreement: any description of agreements or compromises that occur during conflict process

3.2.2 Disagreement: any description of disagreements that occur during conflict process

4. Positives: any reference to participants' experience of positives with mobile phones in the family

APPENDIX E: DEFINITIONS

Internalization - the “Unconscious mental process where characteristics, beliefs, feelings and attitudes of other people are assimilated into your own self” (Psychology Dictionary). Where “other people” are defined as various media outlets (e.g., online articles, television programming, social media, etc.) and authority figures (e.g., school principals, medical and government bodies, police departments, etc.).

Conflict - defined as a “behavioral opposition” that occurs between parents and teens (Laursen & Collins, 1994). A behavioral opposition requires that there are two actors, A and B, where A does not comply with the behavioral requests or demands of actor B.

Appendix F: Mobile Phone Problem Use Scale

Bianchi, A. & Phillips, J. G. (2005). Psychological predictors of problem mobile phone use. CyberPsychology & Behavior 8, 1: 39-51.

TABLE 1. MOBILE PHONE USE SURVEY

-
1. I can never spend enough time on my mobile phone.
 2. I have used my mobile phone to make myself feel better when I was feeling down.
 3. I find myself occupied on my mobile phone when I should be doing other things, and it causes problems.
 4. All my friends own a mobile phone.
 5. I have tried to hide from others how much time I spend on my mobile phone.
 6. I lose sleep due to the time I spend on my mobile phone.
 7. I have received mobile phone bills I could not afford to pay.
 8. When out of range for some time, I become preoccupied with the thought of missing a call.
 9. Sometimes, when I am on the mobile phone and I am doing other things, I get carried away with the conversation and I don't pay attention to what I am doing.
 10. The time I spend on the mobile phone has increased over the last 12 months.
 11. I have used my mobile phone to talk to others when I was feeling isolated.
 12. I have attempted to spend less time on my mobile phone but am unable to.
 13. I find it difficult to switch off my mobile phone.
 14. I feel anxious if I have not checked for messages or switched on my mobile phone for some time.
 15. I have frequent dreams about the mobile phone.
 16. My friends and family complain about my use of the mobile phone.
 17. If I don't have a mobile phone, my friends would find it hard to get in touch with me.
 18. My productivity has decreased as a direct result of the time I spend on the mobile phone.
 19. I have aches and pains that are associated with my mobile phone use.
 20. I find myself engaged on the mobile phone for longer periods of time than intended.
 21. There are times when I would rather use the mobile phone than deal with other more pressing issues.
 22. I am often late for appointments because I'm engaged on the mobile phone when I shouldn't be.
 23. I become irritable if I have to switch off my mobile phone for meetings, dinner engagements, or at the movies.
 24. I have been told that I spend too much time on my mobile phone.
 25. More than once I have been in trouble because my mobile phone has gone off during a meeting, lecture, or in a theatre.
 26. My friends don't like it when my mobile phone is switched off.
 27. I feel lost without my mobile phone.
-

Appendix G: Smartphone Addiction Proneness Scale (SAS)

Kim, D., Lee, Y., Lee, Y., Nam, J. K. & Chung, Y. (2014). Development of Korean smartphone addiction proneness scale for youth. PloS one 9, 5: 1-8.

Subdomain	Items
Disturbance of Adaptive Functions	My school grades dropped due to excessive smartphone use.
	I have a hard time doing what I have planned (study, do homework, or go to afterschool classes) due to using smartphone.
	People frequently comment on my excessive smartphone use.
	Family or friends complain that I use my smartphone too much.
	My smartphone does not distract me from my studies.
Virtual Life Orientation	Using a smartphone is more enjoyable than spending time with family or friends.
	When I cannot use a smartphone, I feel like I have lost the entire world.
Withdrawal	It would be painful if I am not allowed to use a smartphone.
	I get restless and nervous when I am without a smartphone.
	I am not anxious even when I am without a smartphone.
	I panic when I cannot use my smartphone.
Tolerance	I try cutting my smartphone usage time, but I fail.
	I can control my smartphone usage time.
	Even when I think I should stop, I continue to use my smartphone too much.
	Spending a lot of time on my smartphone has become a habit.

Appendix H: Problematic Use of Mobile Phones Scale (PUMP)

Merlo, L. J., Stone, A. M., and Bibbey, A. (2013). *Measuring problematic mobile phone use: development and preliminary psychometric properties of the PUMP scale. Journal of addiction.*

TABLE 2: PUMP Scale item analysis.

Item	M (SD)	Range	Corrected item total correlation	Alpha if item deleted
When I decrease the amount of time spent using my cell phone I feel less satisfied. (<i>Tolerance</i>)	1.61 (.96)	1–5	.68	.933
Tolerance—I need more time using my cell phone to feel satisfied than I used to need. (<i>Tolerance</i>)	1.53 (.84)	1–5	.65	.933
When I stop using my cell phone, I get moody and irritable. (<i>Withdrawal</i>)	1.43 (.83)	1–5	.72	.933
It would be very difficult, emotionally, to give up my cell phone. (<i>Withdrawal</i>)	2.36 (1.36)	1–5	.62	.934
The amount of time I spend using my cell phone keeps me from doing other important work. (<i>Longer time than intended</i>)	1.70 (.99)	1–5	.74	.932
I have thought in the past that it is not normal to spend as much time using a cell phone as I do. (<i>Longer time than intended</i>)	1.73 (1.06)	1–5	.57	.934
I think I might be spending too much time using my cell phone. (<i>Great deal of timespent</i>)	1.67 (1.09)	1–5	.72	.932
People tell me I spend too much time using my cell phone. (<i>Great deal of time spent</i>)	1.60 (1.08)	1–5	.74	.931
When I am not using my cell phone, I am thinking about using it or planning the next time I can use it. (<i>Craving</i>)	1.86 (1.07)	1–5	.75	.931
I feel anxious if I have not received a call or message in some time. (<i>Craving</i>)	2.23 (1.23)	1–5	.67	.932
I have ignored the people I'm with in order to use my cell phone. (<i>Activities given up or reduced</i>)	2.09 (1.28)	1–5	.72	.931
I have used my cell phone when I knew I should be doing work/schoolwork. (<i>Activities given up or reduced</i>)	2.73 (1.56)	1–5	.68	.933
I have used my cell phone when I knew I should be sleeping. (<i>Use despite physical or psychological problems</i>)	2.66 (1.64)	1–5	.64	.934
When I stop using my cell phone because it is interfering with my life, I usually return to it. (<i>Use despite physical or psychological problems</i>)	1.85 (1.10)	1–5	.67	.933
I have gotten into trouble at work or school because of my cell phone use. (<i>Failure to fulfill role obligations</i>)	2.00 (1.38)	1–5	.56	.935
At times, I find myself using my cell phone instead of spending time with people who are important to me and want to spend time with me. (<i>Failure to fulfill role obligations</i>)	1.65 (.96)	1–5	.74	.932
I have used my cell phone when I knew it was dangerous to do so. (<i>Use in physically hazardous situations</i>)	2.45 (1.41)	1–5	.55	.935
I have almost caused an accident because of my cell phone use. (<i>Use in physically hazardous situations</i>)	2.13 (1.32)	1–5	.51	.936
My cell phone use has caused me problems in a relationship. (<i>Use despite social or interpersonal problems</i>)	1.53 (1.02)	1–5	.43	.936
I have continued to use my cell phone even when someone asked me to stop. (<i>Use despite social or interpersonal problems</i>)	1.69 (1.15)	1–5	.56	.934

Note: item responses ranged from 1 = strongly disagree to 5 = strongly agree.

Appendix I: Hooper & Zhou Mobile Phone Survey

Hooper, V. & Zhou, Y. (2007). *Addictive, dependent, compulsive? A study of mobile phone usage. BLED 2007 Proceedings 38: 272, 285.*

Table 2 Cronbach's alpha for each construct

Construct		Question	Cronbach's alpha	Cronbach's alpha if item deleted
Habitual	19	I frequently use my cell phone at inappropriate times without thinking e.g. during lecture		
	1	Using my cell phone is something I do without thinking		
	28	I end up using my cell phone more than I need to just because I do it all the time		
	7	I often start to use my cell phone, even though I might be uncertain about my intention to use it		
	16	Sometimes I want to use my cell phone, but I do not have a clear ideal why I want to use it		
	29	I use my cell phone at times when I see everyone else uses theirs	.793	
Mandatory	4	My parents wanted me to have a cell phone so they can keep in touch with me		
	18	I have a cell phone because my employer or colleagues ask me to		
	10	I got my cell phone to use in case of emergency		
	30	I have a cell phone so that my friends can keep in touch with me		
	6	People who are important to me think that I should use a cell phone	.525	
Dependent	1	When I don't have my cell phone with me, I feel incomplete		
	22	I feel lost when I leave my cell phone at home		
	15	I feel anxious if I forget to take my cell phone with me		
	25	I feel anxious or nervous on days when I can't use my cell phone		
	12	I feel upset to think that I might be missing calls or messages	.	.842
	27	I always leave my cell phone on	.798	

Addictive	2	My cell phone starts to disrupt my daily life.		
	26	I feel that I don't have control of my impulse to use my cell phone		
	11	I feel others would be horrified if they knew of my cell phone usage habits		
	20	I don't seem able to change my cell phone usage behaviour even though people tell me I spend too much time on it		.880
	8	I have total control over using my cell phone, I can take it or leave it	.526	
Compulsive	9	I have to use my cell phone even when I know I can't afford it		
	14	Just using my cell phone, no matter what I do with it, makes me feel good		
	24	I usually ignore the harmful consequences of spending too much time talking on the phone instead of attending to people around me		
	17	I feel guilty when I use my cell phone more than I need to	.608	
Voluntary	23	A cell phone allows me to use my time efficiently		
	31	It is financially beneficial to use a cell phone as opposed to a landline		
	32	Using a fashion cell phone improves my image		
	21	Using a cell phone improves my relationship with my friends		
	5	I find cell phones are easy to use		
	13	Having a cell phone makes me feel safe while I am walking alone at night	.538	

Appendix J: Adapted Cell Phone Addiction Test (ACPAT)

Smetaniuk, P. (2014). A preliminary investigation into the prevalence and prediction of problematic cell phone use. Journal of behavioral addictions 3, 1: 41-53.

Table 2. Adapted cell phone addiction test (ACPAT) and comparative view of frequency distributions between student (ACPAT_{sp}, N = 301) and nonstudent (ACPAT_{ap}, N = 362) populations

Item: How often...?	ACPAT _{sp} Count (%)	ACPAT _{ap} Count (%)
1. Staying on phone longer than intended.	124 (41.20)	109 (30.10)
2. Neglecting chores.	56 (18.60)	60 (16.60)
3. Preferring phone use to intimacy with partner.	23 (07.70)	49 (13.60)
4. Forming new relationships with callers.	54 (18.00)	57 (15.80)
5. Others complaining about your phone use.	29 (09.60)	59 (16.30)
6. Grades/Schoolwork suffers.	32 (10.60)	35 (09.60)
7. Checking incoming messages first before other things.	191 (63.40)	143 (39.50)
8. Job performance/productivity suffers.	36 (11.90)	54 (14.90)
9. Become defensive/secretive about phone use.	61 (20.30)	70 (19.40)
10. Using phone to block out other disturbing thoughts.	34 (11.30)	57 (15.70)
11. Anticipating when you can use cell phone.	67 (22.30)	84 (23.20)
12. Fearing life without cell is boring/joyless.	51 (17.00)	72 (19.80)
13. Act annoyed when someone bothers you.	30 (09.90)	52 (14.30)
14. Losing sleep.	60 (20.00)	57 (15.80)
15. Preoccupied with being connected when cell is off.	43 (14.30)	52 (14.30)
16. Saying, "Just a few more minutes" when using cell.	49 (16.40)	68 (18.80)
17. Cutting down on cell phone use.	38 (12.70)	51 (14.10)
18. Inventing excuses to others why you're on cell too long.	23 (07.60)	44 (12.20)
19. Choosing cell use over spending time with others.	24 (08.00)	47 (12.90)
20. Feeling depressed, moody or nervous when not using.	33 (10.90)	57 (15.80)

Note: ACPAT is a 20-item scale measuring degrees of concern relative to preoccupation (salience), excessive use, neglecting work/and social life, lack of control, and anticipation. Each item is semantically modified to fit cell phone use. Counts and percentages are summed scores of indices (i.e., "Frequently + Often + Always" = Total). Originally developed by Young (1998, 2004) for measuring Internet addiction and based on DSM-IV (2000) criteria for "pathological gambling". ACPAT_{sp} (sp = student population), $\alpha = .93$. ACPAT_{ap} (ap = adult population), $\alpha = .96$.