

Keeping in Touch: Relationships between Parenting Style, Parent-Child Electronic  
Communication, and the Developing Autonomy and Adjustment of College Students

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Dissertation submitted in partial fulfillment of  
the requirements for the degree of Doctor  
of Philosophy in the Department of  
Psychology and Neuroscience in the Graduate School  
of Duke University

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ABSTRACT

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## **Abstract**

Traditionally seen as a time for increasing independence and autonomy, the college experience is often the first major, long-term physical separation from parents (Chickering, 1969; Chickering & Reisser, 1993). For previous generations, living away from home provided conditions for autonomy development partially based on infrequent contact with parents. In contrast, the rapid evolution of communication technology in the recent past allows today's generation of college students to connect to their parents instantly and frequently through a variety of electronic means including cellular phone calls, text messages, emails, video chats, and social media. The current study used self-report data from 180 residential college students at a mid-sized private institution in the southeastern United States to explore parent-child communication patterns as they relate to parenting styles and the development of emotional autonomy and adjustment to college. Emotional autonomy was measured with items from the Emotional Autonomy Scale (EAS; Steinberg & Silverberg, 1986). Following Beyers, Goossens, Van Calster, & Duriez (2005), a separation scale (derived from the EAS subscales of parental deidealization, nondependence on parents, and individuation) was used as a measure of emotional autonomy. Two scales from the Student Adaptation to College Questionnaire (Baker & Siryk, 1984) measured students' academic and social adjustment to college.

Results indicated that, in a given week, students reported an average contact frequency (with both parents combined) of 10.92 cell phone calls, 49.88 text messages, and 6.04 email

exchanges. Contact was initiated by students and parents at roughly the same rates, and females had more contact with parents than males, in general. Facebook was more popular than Twitter and Instagram for connecting with parents through social media, and the majority of students felt either neutral or positive about being “Facebook friends” with their parents. Overall, students reported high satisfaction with both the frequency and the quality of communication with their parents. Greater levels of parental closeness significantly predicted higher satisfaction with the parent-child Facebook friendship.

The relationships between the traditional parenting styles of permissive, authoritative, and authoritarian parenting (Baumrind, 1991) were investigated in relation to communication patterns, autonomy, and adjustment. Helicopter parenting was also included as a predictor variable, though it is considered separate from the traditional parenting styles (Padilla-Walker & Nelson, 2012). Results of hierarchical regression analyses indicated that parents’ higher scores on authoritarian parenting and helicopter parenting predicted more frequent cell phone contact with parents. Parental closeness also emerged as a significant, positive predictor of frequency of cell phone and total communication. Students who talked on their cell phones more frequently overall (not including parental contacts) tended to talk to their parents more often on the phone, and the same went for texting, as well.

Helicopter parenting also predicted lower emotional autonomy. Surprisingly, authoritative and permissive parenting significantly predicted lower emotional autonomy, while authoritarian parenting was related to greater autonomy. Analyses investigating frequency of

cell phone contact with parents as a moderator of this relationship indicated that more frequent phone conversations predicted decreased autonomy when parents were more authoritative. High levels of authoritarian parenting, on the other hand, resulted in higher levels of autonomy regardless of how often students talked on the phone with parents, while high contact with less authoritarian parents predicted decreased autonomy. Frequency of cell phone contact with parents was unrelated to academic and social adjustment to college. Findings are discussed in light of previous research and situated within a framework proposing that technological advances in communication have contributed to lengthening the path to adulthood.

# Contents

Abstract.....	v
List of Tables .....	xi
List of Figures.....	xiii
Acknowledgements.....	xv
Introduction.....	1
The Developmental Period of Emerging Adulthood.....	3
Emotional Autonomy in Adolescence and Emerging Adulthood .....	4
Parenting Styles in Adolescence and Emerging Adulthood.....	6
College Students' Electronic Communication with Parents.....	10
The Current Study .....	14
Method.....	17
Participants.....	17
Procedure.....	18
Measures.....	19
Data Analytic Plan.....	26
Research Question 1: Descriptives.....	26
Research Question 2: Parenting styles and patterns of communication.....	26
Research Question 3: Parenting styles, frequency of communication, and emotional autonomy.....	27

Research Question 4: Parenting styles, frequency of communication, and college adjustment. ....	29
Results.....	31
College Students’ General Patterns of Electronic Communication.....	31
College Students’ Contact with Parents .....	34
Perceptions of Communication with Parents .....	45
Descriptive Statistics .....	58
Regression Analyses.....	64
RQ2a: Parenting styles and frequency of communication. ....	65
RQ 2b: Parenting styles and Facebook connections between college students and their parents .....	82
RQ3: The role of cell phone contact in the relationships between parenting styles and emotional autonomy .....	87
RQ4a: The role of cell phone contact in the relationships between parenting styles and academic adjustment to college.....	98
RQ4b: The role of cell phone contact in the relationships between parenting styles and social adjustment to college. ....	102
Discussion.....	104
Modes and frequency of communication between college students and their parents.....	104
College students’ connectedness to parents via social media.....	106
Content of communication between college students and their parents.....	109
Parenting style and frequency of communication with parents in emerging adulthood.....	111
Parenting style, communication, and emotional autonomy in emerging adulthood.....	112

Parenting style, frequency of communication, and adjustment to college .....	115
Demographic variables .....	116
Limitations and Future Directions .....	120
Conclusions and Reflections: The role of technology in the lengthening path to adulthood	121
Beyond Individual and Relational Dynamics .....	125
Appendix A .....	128
Appendix B .....	154
References .....	165
Biography .....	176

## List of Tables

<i>Table 1.</i> College students' average cell phone and text messaging use overall .....	32
<i>Table 2.</i> Number and percentage of college students who participate in social media.....	33
<i>Table 3.</i> College students' electronic communication with parents .....	36
<i>Table 4.</i> Difference between number of electronic contacts initiated by college students and number of contacts initiated by parent.....	40
<i>Table 5.</i> College students' non-electronic communication with parents.....	41
<i>Table 6.</i> Student reports of parents' social media use.....	42
<i>Table 7.</i> College students' topics of discussion with parents .....	49
<i>Table 8.</i> Percent of college students who asked for advice and received unsolicited advice from parents.....	51
<i>Table 9.</i> College students' reports of frequency of parental over-involvement behaviors.....	56
<i>Table 10.</i> Means and standard deviations for student reports of parents' engagement in parenting behaviors by mode .....	57
<i>Table 11.</i> Descriptive statistics: Parenting and adjustment variables .....	60
<i>Table 12.</i> Intercorrelations between college student variables and primary parent variables (student-reported).....	62
<i>Table 13.</i> Intercorrelations between college student variables and secondary parent variables (student-reported).....	63
<i>Table 14.</i> Regression Diagnostics.....	65
<i>Table 15.</i> Summary of separate hierarchical regression analyses predicting <i>cell phone contact</i> with parents from parenting styles .....	68

<i>Table 16.</i> Summary of separate hierarchical regression analyses of final, full models predicting <i>cell phone contact</i> with parents from parenting styles (beta coefficients).....	69
<i>Table 17.</i> Summary of separate hierarchical multiple regressions predicting frequency of <i>email contact</i> with parents from parenting styles .....	75
<i>Table 18.</i> Summary of separate hierarchical multiple regressions predicting frequency of <i>email contact</i> with parents from parenting styles (beta coefficients) .....	76
<i>Table 19.</i> Summary of separate hierarchical multiple regressions predicting frequency of <i>total contact</i> with parents from parenting styles .....	79
<i>Table 20.</i> Hierarchical regression models predicting <i>total contact</i> from parenting style (beta coefficients) .....	80
<i>Table 21.</i> Separate logistic regression models predicting parent initiation of Facebook friendship from parenting style .....	83
<i>Table 22.</i> Summary of hierarchical regression analyses predicting satisfaction with parent/child Facebook friendship from parenting style .....	85
<i>Table 23.</i> Hierarchical regression analyses predicting students' satisfaction with Facebook friendship with primary parent from helicopter parenting (beta coefficients).....	86
<i>Table 24.</i> Summary of hierarchical regression analyses examining the <i>moderating role of cell phone contact</i> with parents on the relationship between authoritative parenting style and emotional autonomy.....	93
<i>Table 25.</i> Summary of hierarchical regression analyses for primary parents examining the moderating role of cell phone contact with parents on the relationship between authoritative parenting style and emotional autonomy (beta coefficients) .....	94
<i>Table 26.</i> Summary of hierarchical regression analyses examining the <i>moderating role of cell phone contact</i> with primary parents on the relationship between <i>authoritarian</i> parenting style and emotional autonomy (beta coefficients).....	96

## List of Figures

<i>Figure 1.</i> Model of the relationships between parenting style, frequency of communication, and autonomy .....	28
<i>Figure 2.</i> Model of the relationships between parenting style, frequency of communication, and adjustment.....	30
<i>Figure 3.</i> College students' mean frequency of communication with parents by gender and mode .....	35
<i>Figure 4.</i> College students' and their parents' use of social media .....	42
<i>Figure 5.</i> College students' topics of discussion with parents .....	48
<i>Figure 6.</i> Percent of male students who ask for advice and receive unsolicited advice from parents.....	52
<i>Figure 7.</i> Percent of female students who ask for advice and receive unsolicited advice from parents.....	53
<i>Figure 8.</i> Percent of male and female students who report that their parent has ever engaged in overinvolvement behaviors.....	55
<i>Figure 9.</i> Parenting behaviors by mode, gender, and primary (P1) or secondary parent (P2).....	58
<i>Figure 10.</i> Primary parent cell phone contact does not mediate the relationship between parenting style and emotional autonomy .....	90
<i>Figure 11.</i> Secondary parent cell phone contact does not mediate the relationship between parenting style and emotional autonomy. ....	91
<i>Figure 12.</i> Cell phone contact as a moderator between primary parents' authoritative parenting and students' emotional autonomy .....	95
<i>Figure 13.</i> The moderating role of cell contact with primary parent between authoritarian parenting style and emotional autonomy. ....	97

*Figure 14.* Primary parent cell phone contact does not mediate the relationship between primary parent parenting style and college academic adjustment. .... 100

*Figure 15.* Secondary parent cell phone contact does not mediate the relationship between secondary parent parenting style and academic adjustment. .... 101

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## **Introduction**

For most young adults who attend a residential college or university, transitioning to college life involves the first major and long-term physical separation from parents. Traditionally, the college experience has been seen as a bridge between adolescence and adulthood – a time for growth and self-discovery, as well as honing independence and learning to navigate the academic and social challenges of college with limited parental involvement. Over four decades ago, Chickering (1967) found that college is a time for increasing autonomy among students of both genders at campuses of all sizes. In fact, his theory of psychosocial development in college students (Chickering, 1969; Chickering & Reisser, 1993) describes autonomy development as a primary task of the college years, beginning with separation from parents. Still, positive relationships with parents have been shown to help facilitate adaptation to university life (Wintre & Yaffe, 2000). How do families balance independence with closeness when students go off to college with a smart phone in their hands? In an age in which the term “helicopter parent” has recently entered the social lexicon to describe parents who are overinvolved in their children’s lives (Padilla-Walker & Nelson, 2012), college students, their parents, and administrators at the universities they attend can benefit from better understanding the implications of varying approaches to “holding on” and “letting go” during the transition to college and beyond.

For previous generations, living away from parents at college may have provided conditions for autonomy development partially based on infrequent communication with parents. Such communication usually took the form of weekly phone calls from a land line using a long-distance service, with occasional care packages, letters, and cards arriving in the mail (Hofer, Souder, Kennedy, Fullman, & Hurd, 2009). Over the past decade, however, a cultural shift has taken place as a result of rapidly evolving communications technology, bringing about the opportunity for college students and their parents to connect instantly at any time through a variety of electronic means including cellular phone calls, texts, emails, video chats, and social media such as Facebook. A 2008 survey of nearly 1000 students at a small liberal arts college and a large state university indicated that 97% owned a cell phone, and students communicated with their parents an average of 13.4 times per week, which included phone calls, text messages, email, and parental visits (Hofer, 2008). The same study found that college students of both genders often used these means of instant connection to turn to their parents with problems that are commonly encountered when going away to school, such as issues with roommates and friends, difficulty choosing which courses to take, how to do laundry, and even help writing or editing a paper for class (Hofer & Moore, 2010). Parents who are connected to their college-aged children on Facebook may also have access to abundant information about their children's social lives, friends, and daily activities (depending on the child's privacy settings and penchant for posting on Facebook). College students who are hundreds or thousands of miles away from their parents can engage in face-to-face conversations via webcam. This is a considerable shift from

times in the not-so-distant past, when phone calls and letters were the only ways parents of college students could communicate with their children away from home.

For today's parents who are understandably concerned about maintaining relationships and about being assured of the safety, academic success, and well-being of their children, the instant connectivity provided by technology may be a welcome aid to staying in touch. College students may also appreciate the ability to connect with their parents at a moment's notice for advice, support, or just to check in. However, technology that enables instant and frequent communication may lead young adults to continue their dependence on parents for help with academics, time management, and interpersonal issues during a developmental period in which navigating the "rites of passage" of college life (e.g., the tough professor, the all-nighter, the bad roommate) have traditionally been seen as a bridge to independent adulthood. Technology may be one phenomenon behind the lengthening of the developmental period between adolescence and adulthood, through the constant availability of parents and peers alike. Are young adults trading their independence for closeness with their parents? How do families strike a balance between staying close and letting go?

### **The Developmental Period of Emerging Adulthood**

The act of leaving home, which typically occurs at age 18 or 19 in Western societies (Goldscheider & Goldscheider, 1999), is a step towards fulfilling adult roles (Aquilino, 1996; Steinberg, 2010a). But most college students do not think of themselves as adults (Arnett, 2000), and their parents don't either (Nelson, et al., 2007). In fact, the transition to college is an

important life event that coincides with the “emerging adulthood” phase of development. Emerging adulthood is a unique developmental period between the ages of 18 and 25, bridging adolescence and adulthood (Arnett, 2000). During this time, individuals in industrialized countries typically gain independence from parents and engage in exploration before settling into the lasting commitments of adulthood (Arnett, 2000; Johnson, Gans, Kerr, & LaValle, 2010). Most residential college students in the U.S. would be considered emerging adults. It should be noted, however, that the period of emerging adulthood is not a universal developmental stage. Rather, it depends on the cultural context, social institutions, and socioeconomic opportunities encountered by an individual (Arnett, 2000; Bynner, 2005; Heinz & Marshall, 2003).

The notion of emerging adulthood as a developmental phase is relatively new, and points to the lengthening of the path to adulthood that has taken place since the time when most parents of today’s college students ventured out on their own. Increased schooling and delays in marriage and child-bearing have been cited as reasons for this shift (Arnett 2000; 2004). It may be that technology is also increasing the length of this path by promoting dependency on parents in a way that was not previously possible, allowing for frequent contact and an extension of parental monitoring. It is therefore important to investigate how electronic communication with parents relates to autonomy and adjustment in contemporary emerging adulthood.

### **Emotional Autonomy in Adolescence and Emerging Adulthood**

Questions about the balance of parents “holding on” versus “letting go” have been a part of the literature on emotional autonomy for decades. The development of emotional autonomy is

a process that begins in early adolescence and continues to increase throughout adolescence and into emerging adulthood as individuals begin to establish more independence and maturity in close relationships (McElhaney, Allen, Stephenson, & Hare, 2009). Steinberg and Silverberg (1986) identified four aspects of emotional autonomy. *De-idealization of parents* is gaining the understanding that parents are not all-knowing or all-powerful, as well as the ability to see both positive and negative characteristics in parents (Blos, 1979; Steinberg, 2005). This is typically the first sign of autonomy development in early adolescence (Steinberg & Silverberg, 1986). *Seeing parents as people* is a dimension of autonomy that develops later, possibly into emerging adulthood (Smollar & Youniss, 1985; Steinberg & Silverberg, 1986), requiring the greater social-cognitive functioning involved to understand not only that a parent isn't perfect, but also that a parent is an individual who may behave differently in different contexts. *Nondependency on parents*, a third facet of autonomy, also increases throughout adolescence (Steinberg & Silverberg, 1996), reflecting the ability to depend on oneself rather than on parents. Finally, *individuation* is a central feature of autonomy. This sense of being an independent person (Blos, 1967) is gained by shedding childish dependencies on parents and accepting personal responsibility for one's actions (McElhaney et al., 2009). Individuation also increases with age (Steinberg & Silverberg, 1986), and has been shown to be promoted by a child leaving home (Aquilino, 1996). In addition, individual characteristics may also affect the development of emotional autonomy. For example, boys and first-borns are more encouraged to be autonomous at earlier ages (Bumpus, Crouter, & McHale, 2001), as are children of divorce (Feldman &

Quatman, 1998; Sessa & Steinberg, 1991). In many ways, emotional autonomy is characterized by separation from parents, and, as such, parents' behaviors and attitudes towards child-rearing play a significant role in its development, especially during adolescence.

### **Parenting Styles in Adolescence and Emerging Adulthood**

Extensive research has identified parental responsiveness (i.e., responding to the child's needs in a supportive and accepting manner) and demandingness (i.e., requiring mature, responsible behavior from the child) as two critical aspects of parenting behavior in adolescence (e.g. Baumrind, 1978, 1991; Maccoby & Martin, 1983). Appropriately close, warm, and responsive relationships with parents are linked to positive outcomes for adolescents, including autonomy development (e.g., Allen, Hauser, Eickholt, Bell, & O'Connor, 1994; McElhaney et al., 2009). Conversely, strained and tense family relationships are negatively associated with autonomy development in adolescence (Bomar & Sabatelli, 1996; Fuhrman & Holmbeck, 1995). The development of autonomy is best fostered by parents who encourage closeness and connectedness while also promoting individuation. This can be seen in existing research examining autonomy in relation to specific parenting styles that differentially incorporate dimensions of responsiveness and demandingness. The extensive body of literature on parenting styles and the development of autonomy has focused mostly on the developmental period of adolescence, and thus, so will the brief review below. When possible, research on parenting and autonomy development in emerging adulthood is also reviewed.

**Permissive parenting styles.** Permissive parents are responsive but not demanding, and are typically concerned with their child's happiness and generally less concerned with setting boundaries. They do not require mature behavior from their children and allow them to self-regulate (Baumrind, 1991). A lack of guidance and rules from permissive parents may lead adolescents to turn to peers rather than parents for support, and this dependence on peers for guidance may stunt the development of autonomy (Steinberg, 1990).

**Authoritative parenting style.** Authoritative parents are high in both responsiveness and demandingness, providing a balance between independence and restriction (Baumrind, 1971; 1978). These parents are warm but firm, rational and issue-oriented in their discipline, and employ guidelines for behavior that are open to discussion. It follows, then, that authoritative parents emphasize the development of autonomy by allowing for flexibility and encouraging independence (Vuchinich, Angeletti, & Gatherum, 1996). This style of parenting has been consistently linked to positive outcomes for adolescents across the board, including being more responsible, self-assured, and socially and academically skilled (Collins & Steinberg, 2006). Experiences of authoritative parenting are also associated with more positive psychosocial functioning in college students (Buri, Louiselle, Misukanis, & Mueller, 1988; Dominguez & Carton, 1997). Parents' levels of involvement, warmth, support, and acceptance during the early years promote the process of individuation (Tubman and Lerner, 1994). Authoritative parenting has been linked to increased autonomy and decreased substance use in college (Patock-Peckham & Morgan-Lopez, 2009), as well as to better student adjustment to college (Wintre & Yaffe,

2000). The positive effects of authoritative parenting have been demonstrated internationally and among a range of ethnicities, socioeconomic statuses, and family structures, providing ample consistent evidence that the combination of responsive and demanding parenting leads to the best outcomes for adolescents (Steinberg, 2001).

A recent study illustrated the continued importance of parents' warm and responsive approaches to parenting emerging adults. Nelson, Padilla-Walker, Christenson, Evans, & Carroll (2011) investigated a variety of dimensions of parenting *currently* used by the parents of emerging adults. Those whose parents' styles were currently high on warmth, knowledge, and autonomy-granting had higher self-worth, more positive self-perceptions, and higher levels of social acceptance (Nelson et al., 2011). Additionally, they had higher levels of parent-child closeness and relationship quality (Nelson et al., 2011). Although different family interaction styles may emerge during this developmental period when the young adult leaves home (Aquilino 1997; 2006), Nelson et al.'s (2011) results suggest that authoritative-type parenting may be similarly beneficial in emerging adulthood as it was during previous periods of development.

**Authoritarian parenting style.** Parents who are lower on responsiveness but who are very demanding are authoritarian, emphasizing obedience, favoring more punitive discipline, and typically restricting the adolescent's independent decision-making (Baumrind, 1971; 1978). Authoritarian parenting may interfere with autonomy development, particularly among European American adolescents (e.g., Lamborn, Dornbusch, & Steinberg, 1996). One study of predominantly European American college students (Morgan-Lopez and Patock-Peckham, 2009)

revealed decreased levels of autonomy-supportive behaviors by authoritarian fathers, which led to increased depression and alcohol use among emerging adults of both genders. Among males, mothers' authoritarian parenting was also related to decreased parental autonomy-granting and to college students' depression (Morgan-Lopez & Patock-Peckham, 2009). Students' emotional autonomy from parents was not measured in the study, however.

Nelson et al. (2011) identified parents of emerging adults who were currently high on control and low on responsiveness in their parenting style. College students with highly demanding but less responsive mothers or fathers had the highest levels of depression, anxiety, and impulsivity, as well as lower parent-child relationship quality, suggesting that the negative effects of authoritarian-type parenting extend into emerging adulthood.

**Helicopter parenting.** Autonomy is clearly fostered by warm, close family relationships, but parents' over-involvement, overprotectiveness, or intrusiveness can stunt the process of individuation. Recently, the popular media have propagated the notion of "helicopter parents" who are hovering and over-involved in their children's lives (e.g., Belkin, 2010; Glassner & Schapiro, 2012). Padilla-Walker and Nelson (2012) propose that *helicopter parenting* is a unique pattern of the traditional parenting dimensions. They describe this pattern as high on parental warmth/support, high on control, and low on autonomy-granting. A newly developed measure of helicopter parenting was administered to a group of 438 undergraduate students from four U.S. universities, and results revealed that helicopter parenting was related to both positive and negative aspects of the parent-child relationship (Padilla-Walker & Nelson, 2012). For

example, helicopter parents were seen by their emerging adult children as high in guidance, involvement, disclosure, and emotional support, but low in autonomy-granting. Helicopter parenting was negatively related to emerging adults' engagement in school, suggesting that this type of parenting may not be appropriate for the developmental demands of emerging adulthood, which should be a period of learning to become self-reliant. As the concept of helicopter parenting in emerging adulthood is very recent, the current study will contribute to this new body of literature by exploring the effects of helicopter parenting on autonomy and adjustment among college students for the first time, specifically against the backdrop of college students' electronic communication habits with their parents. Following a review of the literature on what is known about college students' communication with parents, I will present the specific research questions of the current study.

### **College Students' Electronic Communication with Parents**

It is no secret that college students are tuned in to technology. Recent Pew Internet and American Life surveys indicate that technology is an integral part of the lives of undergraduate students, nearly 100% of whom use the Internet (Smith, Rainie, & Zickuhr, 2011). Ninety-six percent of college students own their own cell phones, and 63% use their cell phones to access the Internet or email (Smith, 2011a). Emerging adults are by far the most active users of text messaging. Fully 97% of 18-24-year-olds report using text messaging, sending far more texts per day than other age group, with an average of 109.5 (median = 50) texts sent and received per day,

according to the Pew Report (Smith, 2011b). In addition, 86% of undergraduates use social networking sites such as Facebook (Rainie, 2011).

Adults use technological communication as well. Eighty-one percent of adults ages 46-55 go online regularly, and 84% use cell phones (Smith, 2011a). This age group sends and receives an average of 14 texts per day (median = 6), far fewer than emerging adults (Smith, 2011b). The social media trend is growing among this age group as well, with 57% of 46 to 55-year-olds reporting use of online social networking sites (Rainie, 2011). These recent advancements in technology have led to changes in the ways that college students communicate with their parents.

One of the earliest studies of electronic communication between parents and college students focused on email contact between 48 college freshmen and their parents (Trice, 2002). Results revealed that students averaged 6 email contacts per week with their parents, and females were somewhat more likely to use email to contact parents than males. This study also found relationships between parenting style and the frequency and content of email contacts. Students from authoritative families made the most email contacts with their parents, but asked for less specific academic and social advice than did students from authoritarian families, who sought the most advice. Students from permissive households had the fewest contacts with parents, and students from all three groups sought financial assistance at the same rate. This study identified a relationship between parenting style and parent-college student communication, and demonstrates that the content of contact may be more meaningful than the frequency of contact with respect to autonomous behavior. However, this study did not examine the effects of frequency of

communication on any other outcomes for the college students, such as autonomy or adjustment. The small sample size which only included first year students whose parents lived within 100 miles of the college was a limitation of this study. In addition, over a decade has passed since this study found near-daily email communication between college freshmen and their parents. There have been major advances in communication since then, and more recent studies have investigated additional tools for keeping in touch.

Recent research has included a variety of technological media for college students' communication with parents in relation to their adjustment and parent-child relationship characteristics. One study of mostly female college students rated participants' frequency of communication with parents using the following technologies: cell phone calls, texting, emails, and social networking sites (Gentzler, Oberhauser, Westerman, & Nadorff, 2011). Parent-child relationship quality was positively related to more phone communication with parents. Only a quarter of the students reported communicating with parents on social networking sites, and those students had more frequent contact with their parents overall. Interestingly, conflict with parents and loneliness predicted communication with parents on social networking sites (Gentzler et al., 2011). Perhaps these individuals have higher needs for support and intimacy with parents, as demonstrated by their more frequent overall contact with parents. Or, perhaps their parents are the ones having difficulty with the separation. This study did not examine parenting style, initiator of contact on social networking sites, whether it began before college, or what type of interactions took place. A separate study demonstrated that college students had positive

reactions to a hypothetical friend request from a mother, (Karl & Peluchette, 2011), suggesting that simply being “friends” with a parent on a social networking site may be more normative than the frequent, direct communication that was shown to relate to adjustment problems and conflict in parental relationships (Gentzler, et al., 2011). The current study will attempt to investigate some of the nuances of the parent-child social networking site relationship for the first time.

Hofer and colleagues (2008; 2009; 2010) conducted surveys of college students and a subsample of their parents at both a small liberal arts college and a large research institution. College students reported frequent contact with their parents regardless of year in school, distance from home, or socioeconomic status. For the most part, students reported satisfaction with the level of communication, which was initiated at roughly equal rates between parents and students (Hofer, et al., 2009). Focus groups with students revealed that many students depend on parents to fix their problems for them, while others like to check in when they are bored between classes (Hofer, 2010). Results of the surveys also indicated that students’ frequent communication was correlated with lower autonomy and lower satisfaction with both the college experience and relationship with parents (Hofer, 2008).

Hofer’s work on this subject makes up the richest body of research on electronic communication between college students and their parents in the technological age. She notes with some alarm that today’s emerging adults are surprisingly dependent on their parents (and their parents’ constant availability), and may be in danger of delaying their development into

independent adults (Hofer, et al., 2009; Hofer 2010). However, she did not examine communication as a function of parenting style. Her descriptive and correlational research focuses mostly on cell phone contact between parents and college students, and provides an excellent starting point for further research that investigates models of relationships between parenting styles, communication, and adjustment.

### **The Current Study**

The current study both builds upon and extends previous research that has examined college students' communication with their parents. Specifically, this study examines parenting styles in relation to patterns of technological communication, as well as how these relationships affect college students' autonomy and adjustment to college. Previous research on parent-child communication has been somewhat piecemeal, with no single study empirically investigating the nuances of communication and parenting styles in relation to the dependent variables addressed in this study (i.e., autonomy and college adjustment). Moreover, much of the existing research exploring college students' communication with parents has been descriptive and correlational, and there has been little attention to online social networking websites at all. The investigation of electronic communication with parents in the current study will contribute to our understanding of contemporary parenting in emerging adulthood, a research topic which is still in its infancy. Furthermore, this study has the potential to broadly inform parents, who can benefit from an awareness of how the frequency, mode, initiation, and topics of their communication may relate to college student outcomes. Against the backdrop of a social world increasingly defined and

dominated by electronic communication, a better understanding of the relationships and communication between college students and their parents – and how they relate to students’ well-being and sense of independence – can also assist college administrators’ in developing approaches to and guidelines for parent involvement during the transition to college. The specific research questions and hypotheses are described below.

***RQ 1: What are (a) the general patterns and (b) perceptions of patterns of electronic communication between residential college students and their parents?***

The first goal of this study is to describe the communication patterns and perceptions of those patterns among residential college students and their parents, both in general and within the parent-child relationship. The frequency with which college students and their parents use different modes to interact will be examined, as well as the topics of conversation and feelings about their communication. Data on frequency of communication, topics of communication, and perceptions of communication by gender are investigated were collected via a newly created measure described in the Measures section. These analyses are exploratory and will help inform an overarching picture of college students’ communication with their parents.

***RQ2: How are individual levels of parenting styles related to the frequency and topics of communication between residential college students and their parents?***

It is expected that students who perceive their parents as high on authoritative parenting will communicate with them more frequently overall. Students who grew up with warm, responsive, supportive parents may seek to extend those connections via frequent communication. These students are also expected to be more likely to be friends with their parents on Facebook,

initiate friend requests with their parents, and to be highly satisfied with the Facebook relationship. Students who perceive their parents to have higher levels of authoritarian and helicopter parenting may be more likely to try to avoid contact with parents and therefore have lower frequency of contact, as well as fewer Facebook friendships. It is expected that higher levels of authoritarian and helicopter parenting will lead to fewer friend requests initiated by the student on Facebook.

***RQ3: How do parenting styles and communication patterns relate to emotional autonomy development?***

Authoritative parenting is expected to be positively related to emotional autonomy. Higher levels of communication may decrease levels of emotional autonomy in students who perceive their parents to be high on authoritative parenting. Authoritarian parenting and helicopter parenting are expected to be negatively related to emotional autonomy. Higher levels of communication will intensify the negative relationships between these parenting styles and emotional autonomy, resulting in even lower levels of emotional autonomy.

***RQ4: How do parenting styles and communication patterns relate to college students' adjustment to college?***

Frequent communication may threaten adjustment, and this is likely to be magnified for highly authoritarian parents. That is, the college-age children of high communicating authoritarian parents are expected to have the lowest adjustment indices. For college students with warm and responsive authoritative parents, high communication may promote adjustment.

## **Method**

### **Participants**

One hundred eighty-five participants originally completed the survey. Five participants were removed from the sample because their responses revealed that their parents did not currently live in the United States, and there was concern their responses might be affected by time differences and costs of international communication. Respondents were 53% female and 47% male. First-year students made up 52% of the sample, followed by 27% sophomores, 9% juniors, and 13% seniors. The racial breakdown of the participants closely mirrored the Duke undergraduate population: 53% European American, 25% Asian American, 10% African American, 4% Latino, and 5% Multiracial. Three percent of the participants declined to report their race. The majority (59%) of students reported that all of their financial costs for school were covered by family. Eighteen percent did not receive any financial assistance from their families to attend school, 15% received up to one-quarter of their costs to attend school from family, and 8% received up to 75% of their costs. The distance between students' permanent residences and Duke University ranged from one mile to 2861 miles, with an average of 927.83 miles.

Participants were asked to select one primary parental figure and one secondary parental figure to keep in mind when answering questions throughout the survey. The majority of participants selected their biological mother as their primary parental figure (80%), 18% selected their biological father, and the remaining 3% selected another family member. Conversely, 74%

selected biological father as a secondary parent and 16% selected biological mother. Five percent of students did not have a living person whom they considered to be a secondary parental figure, and 4% selected another family member. Only 13% of females and 24% of male college students selected a male as their primary parental figure, and in all but one case that male was a biological father. For most respondents (79%), their primary and secondary parental figures currently lived in the same household.

### **Procedure**

The study was administered beginning in mid-October of the 2012 fall semester, after fall break, in order to give students time to settle in to college life before questioning them about their adjustment and communication with parents. The study was closed during Thanksgiving break and for the following week because visits home would likely alter communication patterns. The study was also administered during the last two weeks of January. The number of days from the start of the fall semester that students completed the survey ranged from 68 to 156, with a mean of 90 days.

Data collection took place via an online survey using the Qualtrics program, which was accessed via the websites of the Psychology and Neuroscience participant pool and the DIISP lab participant pool. After reading a consent form and making sure all of their questions about the study were answered (via phone or email for subject pool participants; in-person for DIISP lab participants), all participants completed the survey questions online in the same order. The study took most students one hour or less to complete. At the end of the study, participants were

provided with a debriefing sheet that explained the purpose of the study and provided the researcher's contact information in case the participant had further questions or concerns. Students recruited through the Department of Psychology and Neuroscience received one department credit hour as compensation for completing the study, and students who participated through the DIISP lab received a \$12 payment.

### **Measures**

The measures in the survey are described below in the order that they were administered in the study (see Appendix A for full measures). Special attention was paid to determining the ordering of these measures to ensure the most accurate and unbiased collection of data, and taking fatigue into account.

**Demographics.** The Demographic Questionnaire assessed the following variables: age, gender, race/ethnicity, year in school, parents' marital status, parents' city of residence (to calculate distance from Duke University), and parents' levels of education and occupation (socioeconomic status was calculated using Hollingshead, 1975). Students were also asked who they would have in mind as they answered questions about their "primary" and "secondary" parental figures.

**College Students' Communication with Parents Questionnaire (created for this study).** This measure was developed for use in the current study in order to explore patterns of communication among college students and their parents. The questionnaire was designed to identify the frequency of communication via several different modes (i.e., cell phone, texting,

email, video chat, Facebook, postal mail, and face-to-face visits), as well as who initiates the communication (parent or college student). The Facebook section of the questionnaire aimed to gauge the incidence of college students' Facebook friendships with parents, as well as students' feelings about connecting with parents on Facebook. The final sections of the College Student Communication Questionnaire assessed students' general perceptions of and satisfaction with their communication with parents, as well as specific topics of conversation, advice from parents (solicited and unsolicited), and closeness to parents ("How close do you feel to your mother/father?" 1 = not at all close to 4 = very close). Please see Appendix A for a copy of the measure. Variables from this measure that were computed for use in analyses are described below.

***Frequency of parental contact.*** Frequency of parental contact was calculated for each mode and for each parent by summing the responses to the following questions about each mode of communication: "In the last 7 days, how many [cell phone calls/texts/emails] did you make/send to your [primary parent/secondary parent]?" and "In the last 7 days, how many [cell phone calls/texts/emails] did you receive from your [primary parent/secondary parent]?". Students were instructed to consult the call history and text history on their cell phones, as well as to check their email accounts, in order to provide accurate reports of contact. Scores for frequency of total contact were created for each parent by summing the contact scores for each mode.

***Parental monitoring behaviors by mode.*** Respondents were asked how frequently their primary parents used phone calls, texts, video chat, and Facebook to engage in parental monitoring behaviors. The questions for these behaviors were rated on the scale of “1 = never “ through “5 = very often”. Items were based on the Parental Regulation Scale (Barber, Olsen, & Shagle, 1994) and included asking students whether their parents do the following things via phone, text, Facebook, and video chat: “learn more about your friends”, “learn more about your romantic partner”, “find out about your alcohol use”, “find out where you go at night”, and “find out about how you spend your money” ( $\alpha_{Cell} = .83$ ,  $\alpha_{Text} = .87$ ,  $\alpha_{FB} = .90$ ,  $\alpha_{video\ chat} = .91$ ).

***Academic regulation behaviors by mode.*** An academic regulation scale was created by summing the responses to questions about how frequently parents used each mode of communication to “exert pressure for you to perform well academically”, “offer you suggestions on how to succeed academically”, and “tell you how to handle academic challenges” ( $\alpha_{Cell} = .74$ ,  $\alpha_{Text} = .78$ ,  $\alpha_{FB} = .82$ ,  $\alpha_{video\ chat} = .90$ ).

***Emotionally supportive behaviors by mode.*** Emotionally supportive behavior questions included asking how frequently the primary parent “provides emotional support”, “cheers you up”, “tells you (s)he loves you”, and “listens to you vent” through each mode of communication ( $\alpha_{Cell} = .87$ ,  $\alpha_{Text} = .88$ ,  $\alpha_{FB} = .89$ ,  $\alpha_{video\ chat} = .95$ ).

**Parental Authority Questionnaire (PAQ; Buri, 1991).** To assess parenting style, participants completed the PAQ. This scale included 30 items per parent, each assessing one of three different parenting styles as defined by Baumrind (1978): authoritative, authoritarian, and

permissive. Sample items for the 10-item authoritativeness scale include: “My primary/secondary parent always encouraged verbal give-and-take whenever I felt that family rules and restrictions were unreasonable” and “As I was growing up, I knew what my primary/secondary parent expected of me in my family, but I also felt free to discuss those expectations with my primary/secondary parent when I felt they were unreasonable”. Sample items for the 10-item authoritarian scale include: “My primary/secondary parent has always felt that more force should be used by parents in order to get children to behave the way they are supposed to” and “Whenever my primary/secondary parent told me to do something as I was growing up, (s)he expected me to do it immediately without asking any questions”. Sample items for the 10-item permissiveness scale include: “My primary/secondary parent has always felt that what children need is to be free to make up their own minds to do what they want to do” and “As I was growing up, my primary/secondary parent seldom gave me rules and guidelines for my behavior”. Responses for the PAQ are 1 = strongly disagree, 2 = disagree, 3 = unsure, 4 = agree, and 5 = strongly agree. Subscale scores were calculated by summing response values for the ten items within each parenting dimension, with higher scores indicating a greater level of that specific parenting style. Scores are used in combination with each other to evaluate overall perceived parenting experiences. This measure demonstrated adequate reliability in the current sample with alpha scores for the subscales in the current study as follows: primary parent permissiveness .82; primary parent authoritativeness .83; primary parent authoritarianism .89;

secondary permissiveness .87; secondary parent authoritativeness .81; and secondary parent authoritarianism .87.

In addition to using continuous parenting style scores for each subscale in the current study, participants' parents were also classified into one of three parenting categories for one post-hoc analysis in the current study. Classifications were determined by the category with the highest score on the PAQ (Buri, 1991). Because the sample was skewed toward authoritative parenting, 15 participants who were tied for authoritative and authoritarian categories were placed into the authoritarian category for the single analysis that used parenting style as a categorical variable.

**Helicopter Parenting (Padilla-Walker & Nelson, 2012).** Students completed this recently developed five-item measure assessing the degree to which parents make significant decisions for their children during emerging adulthood. Items included: "My parent makes important decisions for me (e.g., where I live, where I work, what classes I take)", "My parent intervenes in settling disputes with my roommate or friends", "My parent intervenes in solving problems with my employers or professors", "My parent solves any problem or crisis I may have" and "My parent looks for jobs for me or tries to find other opportunities for me (e.g., internships, study abroad, etc.)". Response categories are on a five-point scale ranging from 1 = not at all like him/her to 5 = a lot like him/her. The alpha level of the scale with the current sample was .78 for primary parents and .79 for secondary parents, which was slightly lower than Padilla-Walker & Nelson (2012) found for mothers (.87) and fathers (.84) respectively.

**Emotional Autonomy Scale (EAS; Steinberg & Silverberg, 1986).** This 20-item measure of emotional autonomy was created by Steinberg and Silverberg based on Blos' (1978) theory of individuation. It was originally intended to tap into four components of emotional autonomy (deidealization, nondependency, parents as people, and individuation). This instrument is the most widely used in measuring emotional autonomy, but its construct validity has been criticized over the years (McElhaney, et al., 2009). Although higher autonomy scores would be expected to relate to better adjustment according to Steinberg & Silverberg (1986), several studies have found links between high EAS scores and indicators of maladjustment [e.g., susceptibility to peer pressure (Steinberg & Silverberg, 1986); insecure relationships with parents (Ryan & Lynch, 1989); and internalizing (Beyers & Goossens, 1999) and externalizing problems (Turner, Irwin, Tschann, & Millstein, 1993)]. Researchers have suggested that certain items on the EAS tap into detachment from parents rather than emotional autonomy (e.g., Ryan & Lynch, 1989; Schmitz & Baier, 2001). Subsequent factor analysis studies by Beyers and colleagues distinguished two subscales in the EAS, the separation subscale and the detachment subscale (Beyers, Goossens, Van Calster, & Duriez, 2005; Beyers, Goossens, Vansant, & Moors, 2003). The separation subscale consists of 12 items (e.g., "My parents and I agree on everything", reverse coded, and "If I was having a problem with one of my friends, I would discuss it with my mother or father before deciding what to do about it", reverse coded) assessing the degree to which respondents have abandoned childish dependencies on parents and are able to see their parents as individuals separate from themselves. That is, the separation scale captures the positive, normative aspects of

emotional separation from parents. The detachment scale includes the 8 items from the EAS that capture more negative feelings about the separation experience (e.g., “I wish my parents would understand who I really am”). Responses are rated on a four-point Likert scale, where 1 = strongly disagree and 4 = strongly agree. A confirmatory factor analysis conducted with 15-19-year-olds (Pace & Zappulla, 2010) confirmed the Beyers et al. (2005) alternative structure with two factors, separation ( $\alpha = .76$ ) and detachment ( $\alpha = .64$ ). In the current sample, the alpha level of the separation scale was .83, demonstrating higher reliability than Steinberg and Silverburg’s (1986) individuation (.77) and nondependency on parents (.65) scales in this sample. For the current study, emotional autonomy was measured by scores on Beyers et al.’s (2005) proposed separation scale of the EAS.

**Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1984).** Two scales from this self-report measure assessed students’ adjustment to college. Respondents received scores on the academic adjustment and social adjustment scales. The measure consists of 67 items in total (33 items reverse-scored), rated on nine-point Likert scales from 1 = applies very closely to me to 9 = doesn’t apply to me at all. The academic adjustment scale included 24 items, such as “I am satisfied with the level at which I am performing academically”. The social adjustment scale includes 20 items such as “I have some good friends or acquaintances at Duke with whom I can talk about any problems I may have” and “Lonesomeness for home is a source of difficulty for me now”. In the current sample, Cronbach’s alpha values were high for academic adjustment (.89) and social adjustment (.86).

## **Data Analytic Plan**

### **Research Question 1: Descriptives.**

In order to address the first research question, frequencies, means, and standard deviations were used to describe the sample demographics, as well as to ascertain college students' use of communication technology and their communication patterns with their parents. Specifically, the following were explored: 1) frequency of use of specific modes of communication (e.g., cell phones, texting, email, video chat, Facebook; both generally and with their parents); 2) perceptions of communication with parents (i.e., expectations, satisfaction); and 3) topics of communication and advice requests with parents. Independent samples t-tests were employed to test for gender differences. In addition, a series of Pearson correlations were conducted to see how constructs relate to one another and to other variables of interest.

### **Research Question 2: Parenting styles and patterns of communication.**

Relationships between parenting styles and the frequency of parent-child communication by mode were explored using a series of regression analyses to predict the following dependent variables: 1) frequency of cell phone calls, 2) frequency of text messages, 3) frequency of emails, and 4) the frequency of overall communication. Parenting style was the independent variable. Because most parents exhibit levels of all different styles of parenting, it can be difficult and artificial to categorize them into rigid parenting styles categories. In addition, individuals' parenting style scale scores are highly correlated, and it is therefore not recommended to enter them into a single regression together because it results in severe multicollinearity. Therefore, for

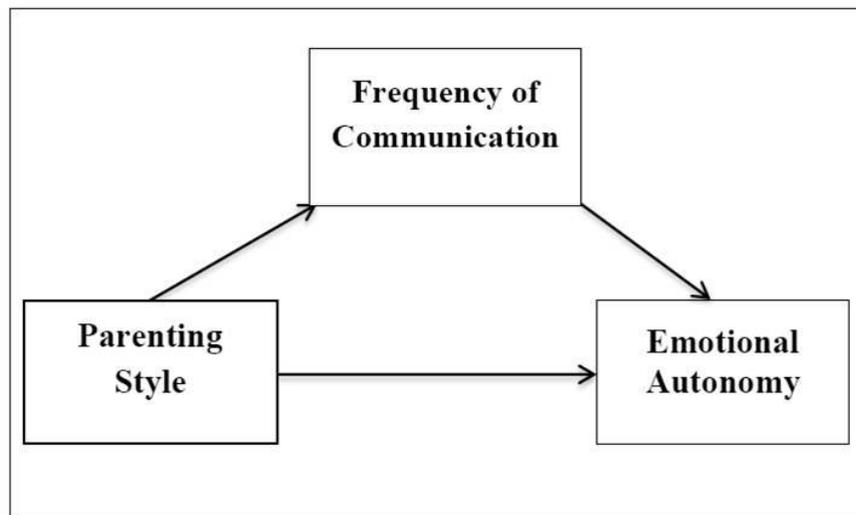
each dependent variable indicating frequency of communication, separate hierarchical regressions were run for each parenting style (permissive, authoritative, authoritarian, and helicopter parenting), and for each parent, resulting in a series of eight regressions. It is important to keep in mind, then, that the results do not indicate independent contributions of each parenting style to the dependent variable. Rather, results demonstrate the effect of the levels of each parenting style within the individual parent, as perceived by the students who reported on the parenting styles of their parents. A number of covariates were controlled for in these analyses including gender, race, year in school, distance from home, the number of days into the semester that the survey was taken, amount of total cell and text use on average overall, and parental closeness.

To investigate connections on Facebook between parents and their college-age children, separate logistical regressions were run to examine if parenting style predicts whether or not a college student is friends with a parent on Facebook, and whether the parent or student initiated the Facebook friendship. Hierarchical linear regression was used to examine parenting style and students' satisfaction with the Facebook friendship.

**Research Question 3: Parenting styles, frequency of communication, and emotional autonomy.** In order to explore how electronic communication with parents may explain or change the relationship between parenting style and emotional autonomy among contemporary college students, both mediational and moderational analyses were conducted.

Nonparametric bootstrapping analyses (see Preacher & Hayes, 2004; Preacher, Rucker, & Hayes, 2007; Preacher & Hayes, 2008) were used to test the model of cell phone contact

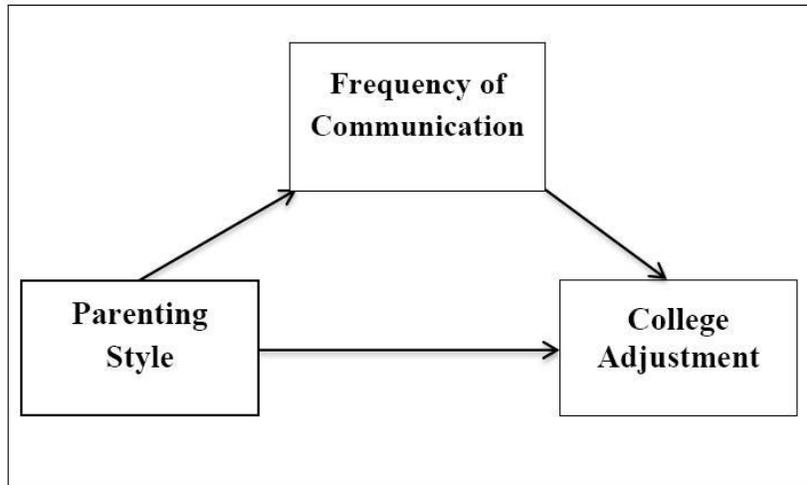
frequency as a mediator of the relationship between parenting style and emotional autonomy. Again, separate models for each parenting style were tested, and the covariates described above were included in the models. The relationships between the independent variables (parenting styles) and the mediator (frequency of communication) were conducted as part of Research Question #2. The relationship between the dependent variable (emotional autonomy) was regressed on the independent variable (parenting style), and finally, emotional autonomy was regressed on both the independent variable (parenting style) and the mediator (frequency of communication). See Figure 1 for a graphical depiction of the relationship between the three variables.



*Figure 1.* Model of the relationships between parenting style, frequency of communication, and autonomy

Moderation analyses were also employed to investigate whether the frequency of cell phone contact with parents moderated the relationship between parenting style and emotional autonomy. Following Aiken and West (1991), interaction terms were computed by multiplying the mean-centered scores for frequency of contact with parent by each parenting style variable (permissive, authoritative, authoritarian, and helicopter). This was done for each parent, resulting in a total of eight interaction terms that were used to test the moderation hypotheses in separate regressions. For each model, covariates were included in the first step as described above.

**Research Question 4: Parenting styles, frequency of communication, and college adjustment.** In order to explore how electronic communication with parents may explain or change the relationships between parenting style and academic and social adjustment to college, both mediational and moderational analyses were conducted. The mediation model of frequency of contact as a mediator of the relationship between parenting style and each of the two measures of adjustment (academic and social) was tested using nonparametric bootstrapping analyses (see Preacher & Hayes, 2004; Preacher, Rucker, & Hayes, 2007) as described above. See Figure 2 for a graphical depiction of the relationship between the three variables. Moderation analyses were also conducted as described above, using the different parenting styles as independent variables, frequency of communication as a moderator, and the separate dependent variables of academic adjustment and college adjustment.



*Figure 2.* Model of the relationships between parenting style, frequency of communication, and adjustment.

## Results

### College Students' General Patterns of Electronic Communication

**Phone calls, texts, and video chats.** Nearly all college students in the study (99%) owned their own cell phones. Eighty-six percent of those phones were “smart” phones (i.e., iPhone or Droid), which typically include the capability to call, text, email, and browse the Internet. Ninety-seven percent of respondents had texting capability on their phones, and 94% had unlimited texting as part of their phone plan. Most students' (87%) cell phone plans were paid for completely by their parents.

As shown in Table 1, students' overall daily cell phone use (i.e., not limited to communication with parents) is characterized by generally high rates of text messaging. They reported sending an average of 48.73 texts per day and 52.80 texts received. Fewer cell phone calls were reported per day than texts, with a mean of 3.03 outgoing calls and 2.93 incoming calls, with no significant gender differences. See Table 1 for means, standard deviations, and ranges of overall communication frequency across modes. There were no differences in use based on gender or year in school.

Table 1. College students' average cell phone and text messaging use overall

	Aggregate	Males		Females	
	<i>M (SD)</i>	<i>M (SD)</i>	Range	<i>M (SD)</i>	Range
Calls made/day	3.03 (2.76)	2.65 (2.38)	0-13	3.37 (3.03)	0-15
Calls received/day	2.93 (3.19)	2.68 (2.81)	0-20	3.15 (3.49)	0-23
Texts sent/day	50.75 (52.68)	50.04 (59.81)	0-250	51.38 (45.90)	0-200
Texts received/day	54.80 (56.70)	53.90 (65.52)	0-250	55.58 (51.44)	0-275

When asked whom they called most frequently, the majority of students indicated their primary parent (55%), followed by a best friend (15%) or a romantic partner (15%). Fewer students reported calling their secondary parents (6%), or someone else (7%) the most. When asked whom they texted most frequently, most students reported best friend (44%), followed by romantic partner (25%), a non-parent family member (6%), primary parent (5%), and secondary parent (3%). The remaining 13% reported that they texted another person most frequently. Open-ended responses indicated that the “other” response was frequently selected to indicate that students text other friends or groups of friends most frequently.

Video chat communication such as Skype or FaceTime was not used as frequently by students as texting and calling, with 9% reporting that they never used it and 34% reporting they used it “sporadically”. Seventeen percent of students used video chat about once a month, 30% weekly, 6% four to five times per week, and 5% daily.

**Social media.** The following sections describe students’ overall use of the social media interfaces of Facebook, Twitter, and Instagram. Table 2 provides college students’ rates of participation in social media for the entire sample of students and broken down by gender.

Table 2. Number and percentage of college students who participate in social media

Total <i>N</i> = 180	Aggregate <i>N</i> (%)	Males <i>n</i> (%)	Females <i>n</i> (%)
Facebook	165 (91.2)	73 (86.9)	91 (95.8)
Twitter	86 (47.8)	35 (42.2)	51 (53.7)
Instagram	66 (36.7)	20 (24.1)	46 (48.4)

**Facebook.** Nine percent of participants had deactivated their Facebook accounts and no longer had a currently active Facebook profile. Of the students with active profiles, the mean number of Facebook friends was 838.71 ( $SD = 371.78$ , range = 71-1928). The college students in this sample checked their Facebook accounts frequently, with 71% of respondents reportedly doing so several times a day, and an additional 16% checking about once per day. Five percent checked Facebook 3-5 days per week, 4% logged in 1-2 days per week, and an additional five percent checked it rarely or never. While the means for frequency of checking Facebook were high for both genders, there was a significant difference, such that females ( $M = 6.57$ ,  $SD = 1.10$ ) reported checking it more frequently than males ( $M = 6.12$ ,  $SD = 1.56$ ), [ $t(177) = 2.25$ ,  $p = .006$ ].

Although most college students logged on to Facebook several times a day, both genders reported that they did not actually update their status on their pages frequently. Fifty-seven percent of students said they “never” or “rarely” post status updates. Nineteen percent posted them every few weeks, and 17% posted status updates one or two days a week. Only 7% of students reported that they updated their status on Facebook more frequently than 1-2 times per week. Similarly low rates were reported for posting pictures on Facebook. Forty-four percent

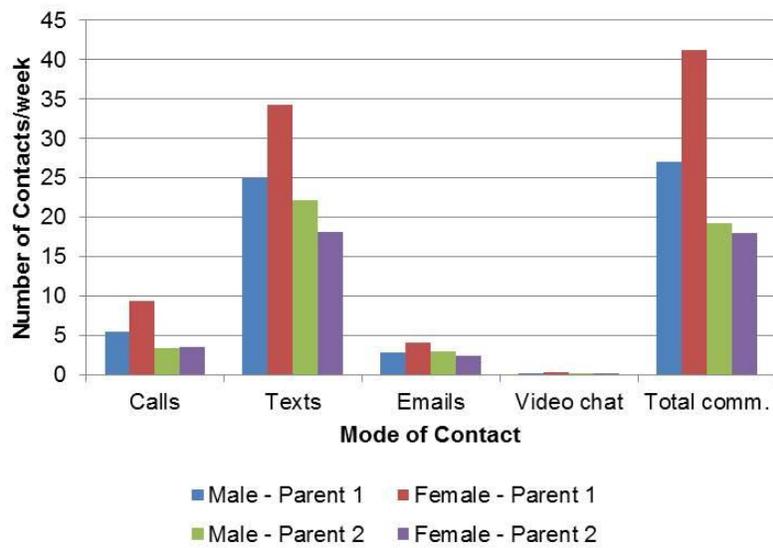
said they “rarely” or “never” posted pictures, while 33% posted pictures every few weeks, 17% posted them one or two days a week, and the remaining 6% posted pictures more frequently than that. Females ( $M = 3.23$ ,  $SD = .99$ ) reported posting pictures on Facebook more often than males ( $M = 2.60$ ,  $SD = .99$ ) [ $t(176) = 6.34$ ,  $p < .001$ ]. When asked to rate their frequency of posting in relation to their peers at Duke, over 70% of students reported that they posted on Facebook less often than most of their friends at Duke, while 28% said they post about as much as their friends. Only three respondents (1.7%) in the sample said they thought they posted more frequently than their friends.

***Twitter and Instagram.*** Other forms of social media were not as popular as Facebook among this sample. Only about half of students (48%) had Twitter accounts, with no significant gender difference. Thirty-six percent of the sample reported that they had Instagram accounts, which were more popular among female students than males [ $\chi^2(1, 178) = 11.23$ ,  $p < .001$ ]. Although 49% of respondents with Twitter accounts reported “tweeting” every few weeks or less, 27% reported posting at least once a week on Twitter, and 23% reported posting once a day or more. Similarly, 53% reported posting pictures on Instagram every few weeks or less, 35% reported posting at least once a week, and 13% reported posting daily.

### **College Students’ Contact with Parents**

**Phone calls and texts.** In addition to questions about their overall use of electronic communication, students were asked to report the number of contacts they had with their parents in the last seven days across different modes of communication. Figure 3 depicts frequency of

communication by mode. Please refer to Table 3 for means, standard deviations, and range values of college students' communication frequencies with parents by gender and mode.



*Figure 3.* College students' mean frequency of communication with parents by gender and mode

Table 3. College students' electronic communication with parents

Number of contacts	Aggregate	Males		Females	
	<i>M (SD)</i>	<i>M (SD)</i>	Range	<i>M (SD)</i>	Range
<b>Parent 1</b>					
P1 Calls/week	7.47 (8.01)	5.50 (5.78)	0-25	9.29 (9.23)	0-45
P1 Texts/week	30.09 (30.66)	24.97 (24.38)	0-105	34.29 (34.57)	0-155
P1 Emails/week	3.43 (5.32)	2.80 (3.93)	0-20	4.00 (6.25)	0-42
P1 Total comm/week	34.41 (33.54)	27.07 (26.27)	0-120	41.25 (37.75)	0-172
<b>Parent 2</b>					
P2 Calls/week	3.45 (4.69)	3.38 (5.70)	0-35	3.54 (3.67)	0-20
P2 Texts/week	19.79 (24.69)	22.21 (25.50)	0-150	18.16 (24.14)	0-140
P2 Emails/week	2.61 (5.28)	2.91 (6.85)	0-47	2.43 (3.81)	0-20
P2 Total comm/week	18.51 (25.12)	17.92 (25.90)	0-183	19.23 (24.60)	0-151

According to students, most of their parents used text messaging services on their cell phones (83% of primary parental figures; 87% of secondary parental figures). In fact, students' most frequently reported interactions with parents occurred via text messaging, with a mean of 30.09 texts per week exchanged with primary parents and 19.79 texts per week with secondary parents. Phone calls made up the second-most frequent mode of communication, with students reporting a mean of 7.47 calls per week with the primary parent and 3.45 calls per week with the secondary parent. Female students contacted their primary parents significantly more often by cell phone than males did [ $t(177) = 3.25, p = .001$ ], but not by text message. There were no significant differences for freshmen when compared to students in other years for either parent.

Significant differences were found between students' frequency of contact with their primary and secondary parental figures. Males had significantly more frequent contact with their

primary parents than secondary parents by cell phone [ $t(77) = 4.02, p < .001$ ], but not via text. Female students had contact with their primary parents significantly more frequently than with their secondary parents by cell phone [ $t(91) = 6.27, p < .001$ ] and text message [ $t(63) = 3.88, p < .001$ ].

Open-ended responses revealed that parents' differing levels of comfort with texting may contribute to the variability in texting with parents. According to students, in some cases, their parents' phones have texting capability, but their parents have trouble typing on their phones or prefer to talk on the phone. Students appear to text often with their parents about logistical issues such as itineraries and plans, as well as short questions and checking in to "let them know I'm alive". Many mentioned brief texting exchanges about sports with their parents, especially pertaining to Duke basketball.

**Email and video chat.** Email and video chat were less frequent forms of communication with both parents, as can be seen in Table 3. Students reported an average total of 3.43 emails per week with the primary parent and 2.61 emails per week with the secondary parent, with no significant differences for gender or year in school.

Female students contacted their primary parents by email significantly more frequently than they contacted their secondary parents by email [ $t(78) = 2.31, p = .02$ ], but not by video chat. There were no significant differences in the number of email or video chat contacts between primary and secondary parents for males.

In open-ended responses, students overwhelmingly reported that email with parents was typically reserved for the exchange of information that is easiest to communicate via computer, such as forwarding documents, receipts, airline itineraries, news articles, and pictures. Some students mentioned emailing academic papers for their parents to edit (as many as 3-4 rounds of revisions). Students described email as a useful tool for the occasions when they want to communicate something to their parents that is too long for a text, and when they do not have time to talk on the phone or think their parents would be unavailable by phone.

When asked how frequently they used video chat with their primary parents, 35% of students reported that they never did, 29% said they did so “sporadically”, 14% reported once per month, 21% reported weekly, and one student (0.6%) reported daily video chat with her primary parent. For the secondary parent, 47% never used video chat, 26% did so sporadically, 12% once a month, and 16% weekly. Two students (1.6%) reported video chatting with the secondary parent four to five times per week. Significant differences in gender or year in school were not detected. Students who used video chat with their parents reported that they typically plan the interactions ahead of time. Many mentioned that they enjoy being able to talk to many family members at one time during video chats, as well as have the opportunity to see family pets. In addition to the fact that about 65% of students mentioned that they use video chat either never or sporadically, many reported that their parents are not comfortable with the technology.

**Overall electronic communication with primary and secondary parents.** The mean of total communication per week across all modes (cell phone calls, texts, and emails) was 34.41

contacts with the primary parental figure and 18.51 contacts with the secondary parental figure. Standard deviations and range values can be found in Table 3. Females had significantly more contacts overall with the primary parent than did males [ $t(177) = 2.88, p = .004$ ]. In addition, paired-sample t-tests indicated significant differences between students' total frequency of contact with the primary and secondary parental figures for both male [ $t(83) = 2.75, p = .007$ ] and female students [ $t(94) = 5.72, p < .001$ ]. However, there were no significant differences for year in school.

**Differences in number of contacts initiated by student and parent.** The number of contacts initiated by each parent was subtracted from the number of contacts initiated by the student for each mode of communication. The resulting difference scores were negative if the parent initiated a greater number of contacts than the student and positive if the student initiated more contacts. Scores close to 0 indicate a relatively equal number of contacts initiated by parent and student. As shown in Table 4, several of the mean difference scores were relatively even.

Table 4. Difference between number of electronic contacts initiated by college students and number of contacts initiated by parent

(Student-Initiated - Parent-Initiated)	Aggregate <i>M (SD)</i>	Males <i>M (SD)</i> Range		Females <i>M (SD)</i> Range	
Parent 1					
P1 Difference Calls/week	.97 (3.69)	.43 (2.93)	-5-15	1.46 (4.21)	-5-23
P1 Difference Texts/week	-.71 (4.92)	-1.40 (5.35)	-18-15	-.14 (4.49)	-10-20
P1 Difference Emails/week	-.49 (1.78)	-.49 (2.10)	-13-4	-.50 (1.48)	-6-3
P1 Difference Total comm/week	-.02 (6.37)	-1.06 (6.38)	-12-23	.91 (6.28)	-12-23
Parent 2					
P2 Difference Calls/week	.35 (1.78)	.21 (1.71)	-3-10	.48 (1.85)	-3-11
P2 Difference Texts/week	.38 (4.14)	-2.68 (5.17)	-25-8	.79 (3.09)	-10-4
P2 Difference Emails/week	-.45 (1.62)	-.69 (2.15)	-13-3	-.29 (1.08)	-5-2
P2 Difference Total comm/week	-1.11 (4.68)	-1.97 (5.31)	-29-11	-.39 (3.97)	-12-13

Note: Positive scores indicate a greater number of child-initiated contacts than parent-initiated contacts

**Non-electronic communication with parents.** Although the multiple avenues for electronic communication are most frequently used by students, they also occasionally communicate with parents face-to-face and through postal mail (see Table 5). Students reported receiving an average of 1.06 cards or letters per semester and 1.55 care packages per semester. The number of days into the year that students completed the survey did not significantly predict the number of cards [ $F(1, 176) = .15, p = .70$ ] or care packages [ $F(1, 175) = 1.42, p = .24$ ] received per semester. Students reported an average of 2.80 face-to-face visits per semester with parents, not including being dropped off and picked up at the beginning and end of the semester. Open-ended responses suggested that parents may visit more often if their son or daughter is involved in athletics or the arts, when parents arranged to attend home games or performances.

Not surprisingly, the greater the distance between Duke and their parent's home, the fewer face-to-face visits each student had with his or her parents [ $F(1, 177) = -24.56, p < .001$ ].

*Table 5.* College students' non-electronic communication with parents

	Aggregate <i>M (SD)</i>	Males <i>M (SD)</i>	Range	Females <i>M (SD)</i>	Range
Cards/semester	1.04 (2.26)	.84 (1.33)	0-6	1.22 (2.85)	0-16
Care pkgs/semester	1.55 (2.06)	1.41 (1.87)	0-8	1.69 (2.23)	0-15
Face-to-face/semester	2.80 (3.02)	2.91 (3.15)	0-20	2.91 (2.93)	0-20

*Note:* Includes both parents combined

**Preferred mode of communication with parents.** Phone calls were the most preferred means of communication with both primary (70%) and secondary (54%) parental figures, despite the numerous advances in technology and the frequency with which college students use text messaging. For the primary parent, this was followed by texting and video chat (both at 12%), email (4%) and other (2%). For the secondary parent, texting was the favorite of 26% of respondents, followed by video chat (10%), email (8%), and other (3%).

**Parents and social media.** The following sections describe students' reports of their parents' overall use of the social media interfaces of Facebook, Twitter, and Instagram. See Figure 4 and Table 6 for rates of use of social media among college students and their parents. College students' interactions with parents via social media are described below.

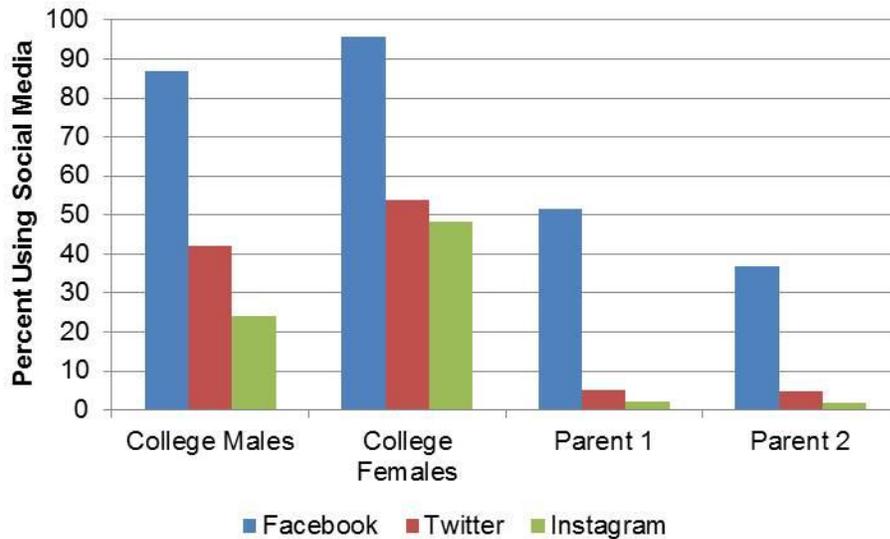


Figure 4. College students' and their parents' use of social media

Table 6. Student reports of parents' social media use

Parent 1 <i>n</i> = 180 Parent 2 <i>n</i> = 171	Parent 1 <i>n</i> (%)	Parent 2 <i>n</i> (%)
Facebook	92 (51.1)	63 (36.8)
FB Friends with child	71 (77.2)	48 (76.2)
Initiated FB friendship	50 (70.4)	34 (70.1)
Twitter	9 (5.0)	8 (4.7)
Instagram	4 (2.2)	3 (1.8)

**Parents' use of Facebook.** Just over half of respondents reported that their primary parent had a Facebook profile (51%), while fewer secondary parents had one (38%). Of those students whose parents had Facebook profiles, rates of parent-child friendship were similar for

both parents: 77% reported current Facebook friendships with primary parents and 76% with secondary parents. Both primary and secondary parents tended to initiate the Facebook friendship by sending their child a friend request. That is, of the students who were friends with their parents on Facebook, only 30% initiated the Facebook friendship with their primary parent, and 30% initiated the Facebook friendship with their secondary parent. Friend requests typically occurred when the child was in high school (63% for primary parents, 70% for secondary students). There were no significant student gender differences in rates of parent-child Facebook friendships with either parent. See Table 6 for rates of college students' parents' use of social media.

Sixty-one percent of students who are friends with their primary parents on Facebook reported that the parent had posted something about the student on Facebook, and 52% reported the same for secondary parent. Only 20% of respondents who were Facebook friends with a parent reported that their primary parent had ever posted anything that they found embarrassing, and even fewer (10%) felt embarrassed by something a secondary parent posted. Overall, college students are mostly neutral or positive in their feelings towards being friends with their parents on Facebook. Forty-eight percent of students reported that they neither liked nor disliked being friends with their primary parent on Facebook, while 60% indicated they felt that way about their secondary parental Facebook friendships. Only 16% disliked and 13% strongly disliked being friends with their primary and secondary parent on Facebook. Thirty-seven percent liked or

strongly liked being Facebook friends with a primary parent, while 28% felt that way about their secondary parent. No significant gender or year in school differences emerged.

Thirty percent of respondents reported that they did not know how frequently either parent checks his or her Facebook page, but for those who were able to report on this, estimates of parent frequency of Facebook use suggest that their parents check it far less often than college students do. One-quarter of both primary parents and secondary parents reportedly checked Facebook at least once a day, 20% of primary and 14% of secondary parents checked it at least once a week, and 18% of primary and 23% of secondary parents check it rarely or never, according to their college student children.

Students were asked to comment on the best and worst things about being friends with their parents on Facebook. Frequent student responses about the positives of being connected to parents on Facebook included examples of sharing pictures and sports articles, parents' ability to see what is going on in their lives, and the fact that having parents' as audience members for Facebook behavior helps students regulate what they post because inappropriate posts may result in comments from parents. Frequent responses about the worst things about being connected to parents on Facebook included parents posting "too many" political posts, parents can see their pictures, parents can see what is going on in their lives, and having to worry about the level of appropriateness of their posts. When asked if there is specific content that they block their parents from seeing on Facebook by using specified privacy settings, the most common responses were pictures of alcohol use and using curse words.

*Parents' use of Twitter and Instagram.* Twitter and Instagram were not as popular as Facebook among college students, and they were even less so among parents. Only 5% of both primary and secondary parents had a Twitter account and 4% and 3% of them, respectively, had Instagram accounts, according to their college student children. A mere four students reported that they “follow” and/or “are followed by” a parent on Twitter, and only three reported following/being followed on Instagram by a parent. Thus, college students do not appear to widely use these types of social media for communication with parents.

### **Perceptions of Communication with Parents**

**Expectations and perceptions of frequency.** Most students reported that their parents did not expect to hear from them every day. Thirty percent of students had primary parents and 16% had secondary parents who expected to hear from them daily, with females significantly more likely than males to report such an expectation for primary parents [ $\chi^2(1, 176) = 6.92, p = .009$ ], but not for secondary parents. There were no significant gender differences for expectations of daily contact with secondary parents, or any differences for either parent based on year in school.

Most students (regardless of gender) reported that they communicated with parents about as much as they expected they would before they went to college (63% of primary and 59% of secondary parents), while 20% (primary) and 27% (secondary) reported less or much less communication than they expected, and 18% and 15% reported that they communicated more or much more frequently than expected. When asked how the frequency of communication

compared to their desire for communication, the majority of students (68%) indicated that they were satisfied with their current frequency of contact with the primary parent, while somewhat fewer (51%) reported the same for the secondary parent. Twenty-nine percent of students desired more contact with their primary and 43% desired more contact with their secondary parent than they currently had. Very few students reported a desire for less frequent contact with the primary (3%) or secondary (6%) parent. When asked to compare their own frequency of communication with parents to that of their friends at Duke, 27% responded that they communicated with their parents less than their friends, 35% said they communicate about the same amount, and 38% believe they do so more than most of their friends at Duke.

**Quality of communication.** Most students, regardless of gender or year in school, reported satisfaction with their communication with their primary parents (81% were either satisfied or very satisfied), while 12% were neutral, and 7% were dissatisfied or very dissatisfied. Ratings of the quality of communication with secondary parents were similar, with 72% reporting satisfaction, 16% neutral, and 12% dissatisfied or very dissatisfied. There were no significant gender or year in school differences in communication satisfaction.

Given the relatively high ratings for communication quality, it is not surprising that students indicated that they have generally close relationships with parents. Thirty-one percent of students reported being close and 61% reported being very close with their primary parents, while 7% said “not close” and less than one percent said “not at all close”. Ratings for closeness to secondary parents were also high, with 84% saying close or very close. There were no significant

differences between males and females or between years in school in reported parental closeness. In addition, 78% of students reported that they considered their primary parent to be a friend, and 71% felt that way about their secondary parent, with no significant gender or year differences for either parent.

**Topics of Discussion.** College students reported discussing topics related to academics and future career plans with their parents most frequently, as well as health and money issues. Of the 15 topics listed, alcohol use, sex, and problems with romantic relationships were among those least frequently discussed with either parent for both genders (see Figure 5). There were no significant differences between male and female students in their report of frequency of topics discussed with the secondary parent or for year in school. Female students reported discussing problems with roommates [ $t(175) = 3.06, p = .02$ ], friends [ $t(176) = 2.38, p < .01$ ], and romantic partners [ $t(176) = 6.01, p < .001$ ] with their primary parent significantly more than males did. While females did not discuss sex with their primary parents frequently ( $M = 1.44, SD = 1.10$ ), they did so significantly more often than males [ $t(175) = 5.09, p < .001$ ]. See Table 7 for rates of college students' topic of communication with parents by gender.

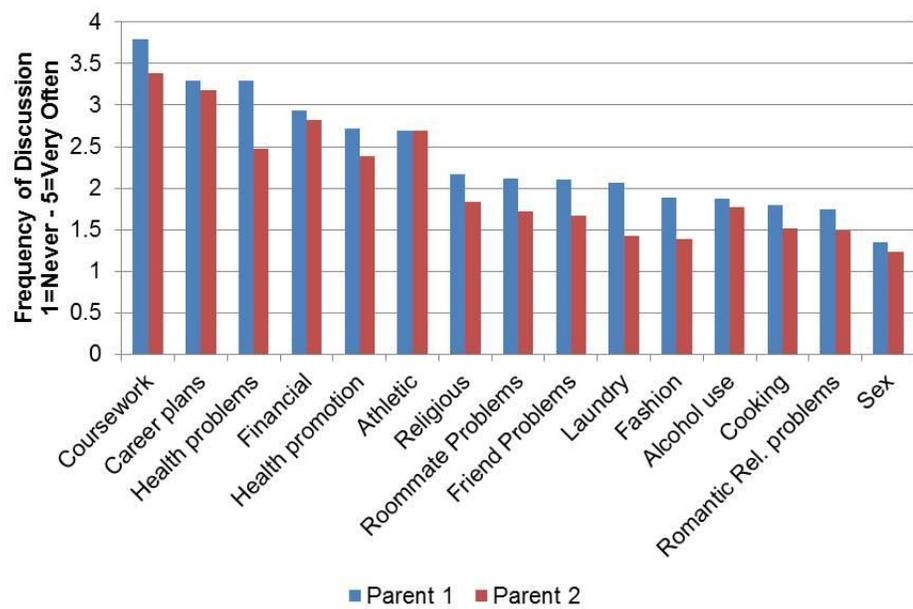


Figure 5. College students' topics of discussion with parents

Table 7. College students' topics of discussion with parents

How often do you discuss with parent? (1=never, 5=very often)	Aggregate <i>M</i> ( <i>SD</i> )	Males <i>M</i> ( <i>SD</i> )	Females <i>M</i> ( <i>SD</i> )
<b>Parent 1</b>			
Current coursework	3.80 (1.10)	3.70 (1.12)	3.89 (1.05)
Career plans	3.30 (1.09)	3.29 (1.09)	3.33 (1.09)
Financial	3.30 (1.21)	2.94 (1.20)	3.60 (1.14)
Health problems	2.94 (1.15)	2.95 (1.21)	2.97 (1.09)
Health promotion	2.72 (1.23)	2.60 (1.16)	2.84 (1.29)
Athletic	2.69 (1.39)	2.95 (1.42)	2.47 (1.33)
Religious	2.17 (1.25)	2.13 (1.26)	2.20 (1.25)
Problems with roommate	2.12 (1.25)	1.82 (1.10)	2.38 (1.31)
Problems with friend(s)	2.10 (1.20)	1.58 (.80)	2.57 (1.30)
Laundry	2.06 (1.16)	2.14 (1.04)	2.15 (1.10)
Fashion	1.89 (1.09)	1.48 (.79)	2.27 (1.19)
Alcohol use	1.87 (.97)	1.70 (.93)	2.02 (.99)
Cooking	1.80 (1.09)	1.94 (1.16)	2.16 (1.16)
Problems with rom. rel.	1.75 (1.04)	1.55 (.80)	1.92 (1.2)
Sex	1.35 (.64)	1.25 (.54)	1.44 (.71)
<b>Parent 2</b>			
Current coursework	3.39 (1.26)	3.40 (1.17)	3.38 (1.34)
Career plans	3.18 (1.20)	3.08 (1.19)	3.27 (1.22)
Financial	2.47 (1.28)	2.79 (1.31)	2.59 (1.35)
Health problems	2.82 (1.27)	2.32 (1.19)	2.79 (1.31)
Health promotion	2.38 (1.31)	2.29 (.96)	2.45 (1.34)
Athletic	2.69 (1.45)	3.05 (1.47)	2.41 (1.37)
Religious	1.84 (1.19)	1.86 (1.19)	1.82 (1.20)
Problems with roommate	1.72 (1.00)	1.65 (.96)	1.79 (1.05)
Problems with friend(s)	1.67 (.95)	1.51 (.82)	1.82 (1.02)
Laundry	1.43 (.86)	1.47 (.91)	1.40 (.83)
Fashion	1.38 (.86)	1.31 (.78)	1.43 (.92)
Alcohol use	1.77 (.9670)	1.60 (.86)	1.92 (1.03)
Cooking	1.52 (.96)	1.48 (.95)	1.54 (.97)
Problems with rom. rel.	1.49 (.84)	1.51 (.82)	1.54 (.92)
Sex	1.23 (.54)	1.25 (.54)	1.22 (.56)

**Solicited and unsolicited advice from parents.** Students were asked to report on whether or not they requested advice from each parent on each topic discussed, and whether or not the parent offered unsolicited advice. The percentage of students who indicated that they asked for advice and/or received unsolicited advice from parents is indicated in Table 8 for each parent, both for the overall sample and broken down by gender of the student. Figures 6 and 7 illustrate the percentages of male and female students asking for and receiving unsolicited advice on each topic.

Among both genders, the topics about which the greatest numbers of students reported requesting advice and receiving unsolicited advice were health problems, coursework, career plans, and financial issues. For males, laundry was also a relatively frequent topic of advice requests and receipts. Sex, romantic relationships, and alcohol use were among the topics about which the fewest students reported requesting advice.

Table 8. Percent of college students who asked for advice and received unsolicited advice from parents

Valid % reported	Aggregate				Male				Female			
	Student asks for advice		Parents offer advice		Student asks for advice		Parents offer advice		Student asks for advice		Parents offer advice	
	N	%	N	%	N	%	N	%	N	%	N	%
Parent 1 <i>n</i> = 180												
Health problems	123	69.5	122	68.9	45	53.6	55	67.1	57	60.0	43	45.3
Career plans	117	66.1	111	62.7	50	59.5	54	65.9	67	70.5	54	64.3
Financial	97	54.8	90	50.0	40	47.6	47	58.0	78	82.1	66	70.2
Current coursework	87	49.2	94	52.2	33	40.2	43	52.4	54	56.8	51	54.3
Health promotion	69	39.0	93	53.1	25	29.8	42	51.9	44	46.3	51	54.8
Cooking	67	38.3	52	29.9	29	34.5	20	23.8	37	38.9	32	33.7
Laundry	63	36.2	55	31.6	30	35.7	26	31.0	33	34.7	29	30.5
Probs with friend(s)	63	36.2	55	31.6	11	13.4	16	19.5	39	41.1	30	31.6
Probs with roommate	55	31.4	55	31.4	15	18.5	21	26.6	40	42.1	34	36.6
Fashion	47	27.2	45	26.2	17	20.2	19	23.8	29	30.5	26	28.6
Athletic	45	25.7	52	30.3	20	23.8	27	32.9	25	26.3	26	28.3
Probs with rom. rel.	42	23.7	62	35.0	14	16.7	24	28.6	28	29.5	38	40.4
Religious	38	21.6	54	31.2	18	21.4	24	29.6	20	21.1	30	31.6
Alcohol use	22	12.7	68	38.6	10	12.5	32	39.0	12	12.6	36	38.7
Sex	12	6.9	48	27.4	4	4.8	21	25.9	8	8.4	27	28.4
Parent 2 <i>n</i> = 167												
Career plans	97	58.1	96	57.5	37	49.3	42	50.0	59	62.1	54	58.7
Financial	84	51.5	76	46.1	35	47.3	31	41.3	40	44.9	36	39.6
Current coursework	82	45.6	81	45.0	30	40.0	34	45.9	52	57.1	47	51.6
Health problems	65	39.4	69	41.8	24	32.0	33	45.2	48	54.5	45	50.6
Athletic	57	34.3	59	36.0	29	34.5	31	41.9	28	31.5	28	31.5
Health promotion	49	29.7	63	38.2	16	21.1	30	40.0	33	37.4	33	37.1
Cooking	25	15.2	23	13.9	11	14.5	13	17.1	14	15.6	10	11.4
Religious	25	15.2	35	21.6	11	14.7	15	20.5	14	15.7	20	22.7
Probs with roommate	25	15.2	35	21.6	10	13.5	9	10.7	15	16.9	17	17.9
Probs with friend(s)	22	13.4	26	15.7	8	10.8	10	13.7	14	15.7	16	17.6
Laundry	20	12.1	16	9.6	13	17.3	11	14.5	7	7.4	5	5.6
Alcohol use	20	12.0	59	35.1	6	7.1	27	35.5	14	15.6	32	35.2
Fashion	15	9.1	22	13.3	8	9.5	11	14.5	7	7.4	11	12.4
Probs with rom. rel.	15	9.2	35	21.1	8	9.5	16	21.9	7	7.4	19	20.7
Sex	4	2.4	22	13.3	2	2.4	16	21.9	2	2.2	6	6.3

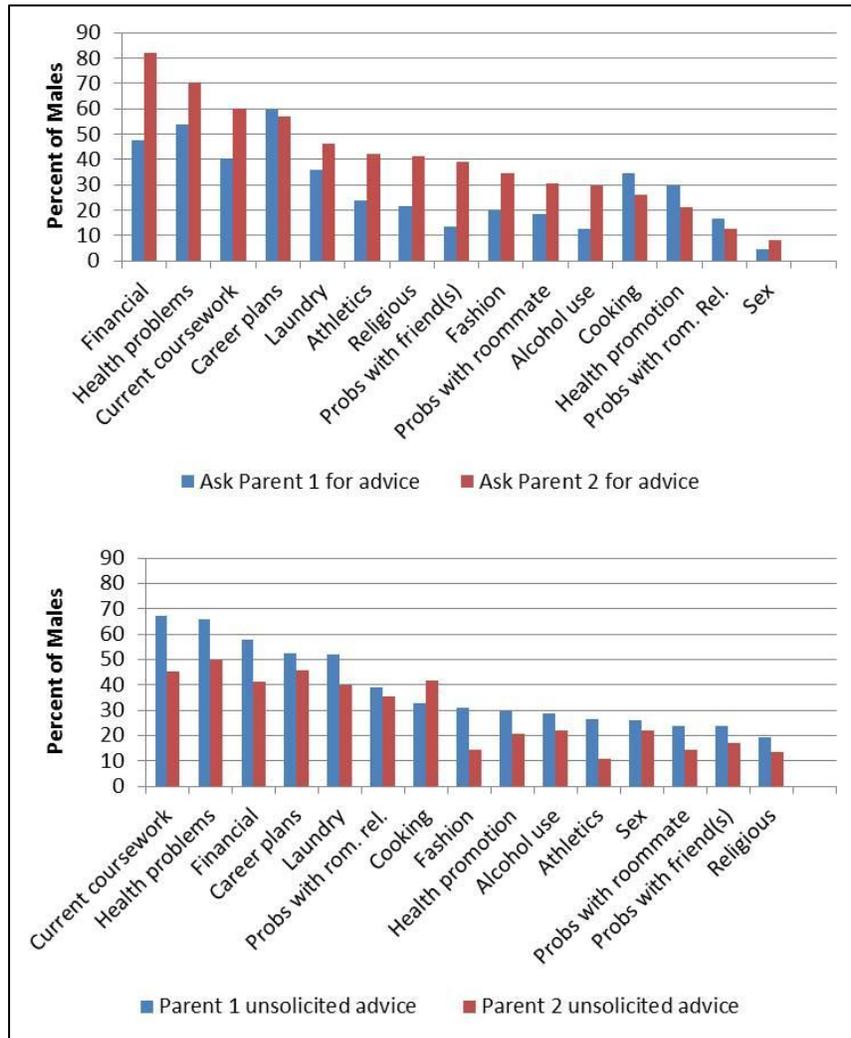


Figure 6. Percent of male students who ask for advice and receive unsolicited advice from parents

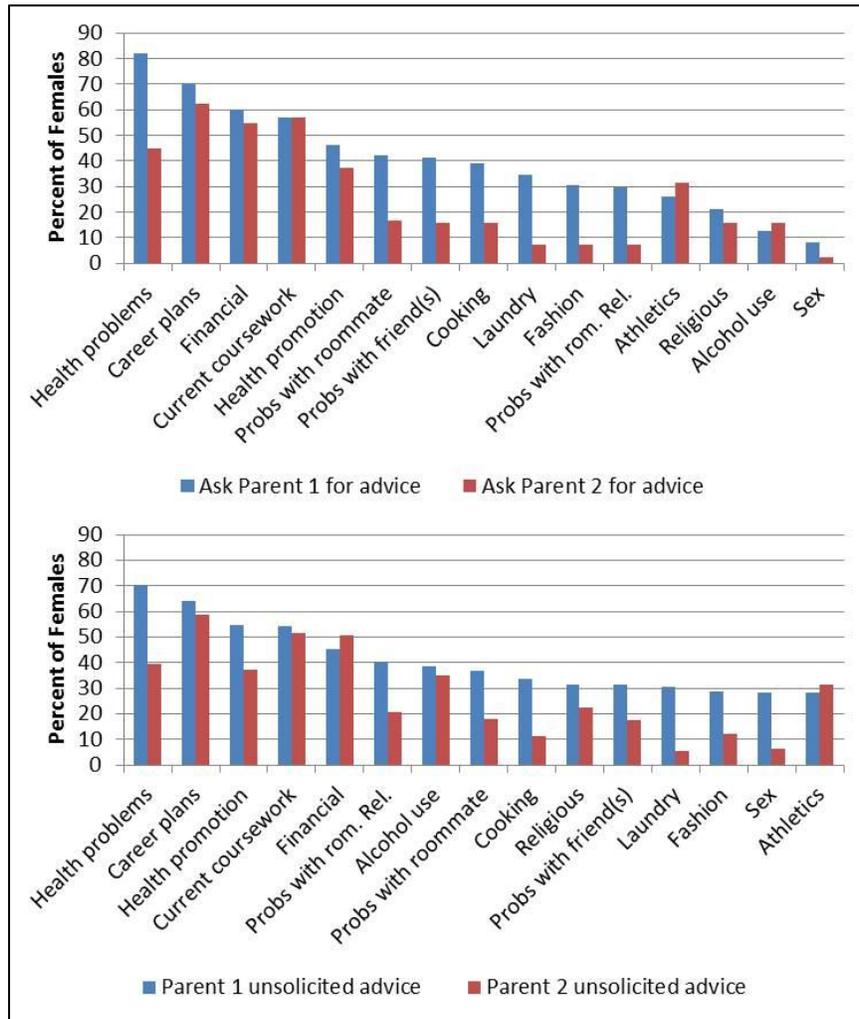


Figure 7. Percent of female students who ask for advice and receive unsolicited advice from parents

**Parental over-involvement.** Students answered questions about how frequently their parents engage in behaviors that may be facilitated by electronic communication, but that we might consider more appropriate for young adults to handle themselves, such as wake-up calls, editing papers, and discussing grade disputes with professors. The vast majority of students reported that their parents had never engaged in any of these behaviors since they started college. As can be seen in Figure 8, the most frequently endorsed over-involvement behaviors included parents making doctor's appointments for college students and editing their papers for them. A few gender differences emerged in parental over-involvement behaviors (Table 9 below indicates the mean and standard deviation for each behavior in total and by gender for each parent). Primary parents (but not secondary parents) of females were significantly more likely to engage in the following behaviors than the primary parents of males: calling with a wake-up call, [ $t(176) = 1.99, p = .04$ ], making a doctor appointment for the student [ $t(176) = 4.08, p < .001$ ], and editing an assignment or paper for the student [ $t(176) = 2.97, p = .003$ ]. Primary parents engaged in some behaviors significantly more frequently than secondary parents, such as wake-up calls [ $t(169) = 3.01, p = .003$ ], having copies of syllabi [ $t(168) = 3.63, p < .001$ ], making doctor appointments [ $t(169) = 5.25, p < .001$ ], editing papers [ $t(169) = 2.36, p = .02$ ], and contacting resident advisors or housing officials [ $t(168) = 2.22, p = .03$ ]. Still, these behaviors were relatively rare. Figure 8 illustrates the percent of students who reported that their parent has ever engaged in each behavior since they started college.

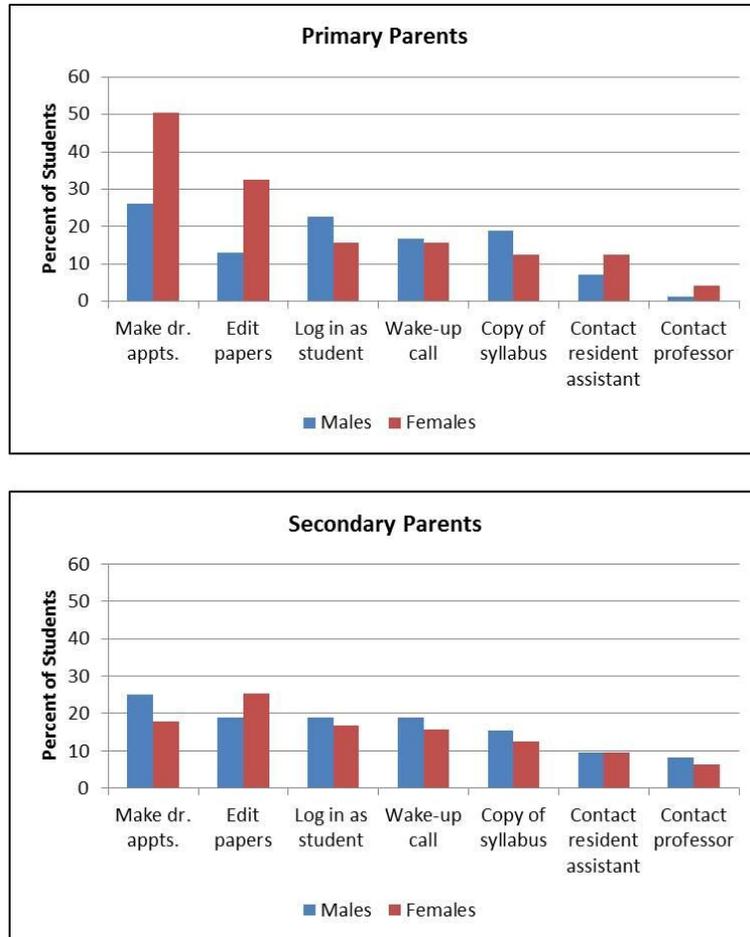


Figure 8. Percent of male and female students who report that their parent has ever engaged in overinvolvement behaviors

Table 9. College students' reports of frequency of parental over-involvement behaviors

1=never – 5=very often	Aggregate <i>M (SD)</i>	Males <i>M (SD)</i>	Females <i>M (SD)</i>
<b>Parent 1</b>			
Make dr. appts.	1.77 (1.15)	1.41 (.83)	2.08 (1.29)
Edit papers	1.41 (.88)	1.20 (.62)	1.59 (1.03)
Log in as a student	1.34 (.81)	1.33 (.70)	1.35 (.90)
Wake-up calls	1.28 (.74)	1.17 (.49)	1.39 (.90)
Copy of syllabus	1.35 (.96)	1.37 (.97)	1.34 (.96)
Contact resident advisor	1.13 (.49)	1.08 (.36)	1.17 (.58)
Contact professor	1.41 (.88)	1.00 (.00)	1.08 (.48)
<b>Parent 2</b>			
Make dr. appts.	1.28 (.72)	1.34 (.82)	1.24 (.64)
Edit papers	1.28 (.69)	1.18 (.58)	1.37 (.77)
Log in as a student	1.21 (.59)	1.17 (.50)	1.24 (.66)
Wake-up calls	1.15 (.50)	1.12 (.43)	1.18 (.55)
Copy of syllabus	1.15 (.60)	1.17 (.50)	1.14 (.51)
Contact resident advisor	1.06 (.33)	1.01 (.11)	1.11 (.43)
Contact professor	1.28 (.69)	1.00 (.00)	1.03 (.18)

**Parenting behaviors by mode of communication.** In order to examine the ways that different modes of communication might be used for parenting behaviors, students were asked to report how frequently their parents engaged in certain behaviors via cell phone, texting, Facebook, and video chat. Means and standard deviations for the frequency of reporting for emotionally supportive behaviors, academic regulation behaviors, and parental monitoring behaviors for each mode of communication can be found in Table 10. Figure 9 illustrates parenting behaviors by mode, by gender, and by primary and secondary parent. As shown in the

figure, students perceived the three types of parenting behaviors as occurring most frequently via cell phone, and rarely over video chat and Facebook, and they perceived emotionally supportive behaviors as the most frequent via all modes of communication for both parents.

*Table 10.* Means and standard deviations for student reports of parents' engagement in parenting behaviors by mode

1=never – 5=very often	Aggregate <i>M (SD)</i>	Males <i>M (SD)</i>	Females <i>M (SD)</i>
<b>Emotional Support</b>			
P1 Cell phone	3.71 (1.18)	3.20 (1.12)	4.19 (.99)
P1 Text	2.46 (1.22)	2.07 (1.08)	2.82 (1.23)
P1 Facebook	1.34 (.81)	1.13 (.44)	1.41 (.93)
P1 Video Chat	1.28 (.75)	1.80 (1.22)	2.53 (1.54)
P2 Cell phone	2.19 (1.44)	2.18 (1.01)	3.32 (1.02)
P2 Text	2.91 (1.11)	1.44 (.77)	2.34 (1.15)
P2 Facebook	1.05 (.33)	1.02 (.14)	1.10 (.45)
P2 Video Chat	1.96 (1.30)	1.40 (.78)	2.30 (1.46)
<b>Academic Regulation</b>			
P1 Cell phone	2.73 (.99)	2.57 (1.04)	2.88 (.90)
P1 Text	1.74 (.87)	1.49 (.64)	1.98 (.97)
P1 Facebook	1.15 (.53)	1.07 (.31)	1.22 (1.13)
P1 Video Chat	1.77 (1.08)	1.57 (.99)	1.94 (1.13)
P2 Cell phone	2.40 (1.08)	2.18 (1.01)	2.62 (1.11)
P2 Text	1.60 (.86)	1.44 (.77)	1.75 (.91)
P2 Facebook	1.04 (.26)	1.02 (.14)	1.65 (.36)
P2 Video Chat	1.65 (1.02)	1.40 (.78)	1.87 (1.15)
<b>Parental Monitoring</b>			
P1 Cell phone	2.47 (.94)	2.12 (.78)	2.81 (.96)
P1 Text	1.67 (.82)	1.49 (.63)	1.84 (.93)
P1 Facebook	1.24 (.63)	1.13 (.36)	1.34 (.80)
P1 Video Chat	1.69 (.82)	1.45 (.76)	1.89 (1.03)
P2 Cell phone	2.00 (.84)	1.84 (.81)	2.15 (.84)
P2 Text	1.46 (.63)	1.37 (.59)	1.54 (.66)
P2 Facebook	1.08 (.33)	1.05 (.21)	1.11 (.41)
P2 Video Chat	1.52 (.82)	1.32 (.66)	1.70 (.91)

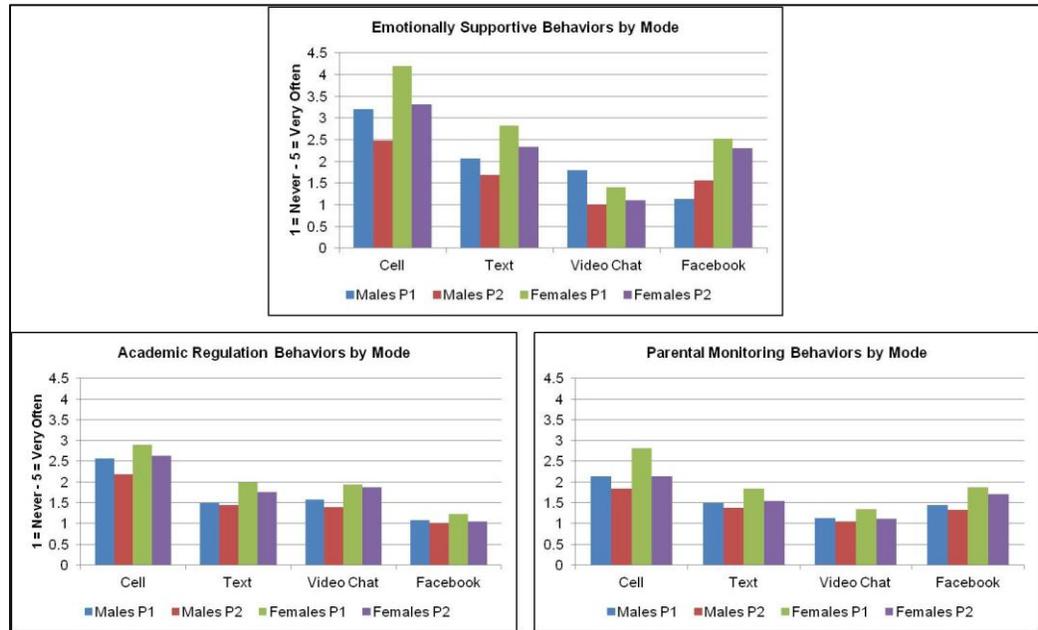


Figure 9. Parenting behaviors by mode, gender, and primary (P1) or secondary parent (P2)

## Descriptive Statistics

**Independent parenting variables.** Means and standard deviations for permissive, authoritative, authoritarian parenting styles, as well as helicopter parenting, are reported in Table 11 for both the primary parent and secondary parent, for the sample as a whole and broken down by gender. No significant student gender differences emerged in the parenting style variables.

When primary parents were assigned to categorical parenting styles, the sample was mostly authoritative ( $n = 113$ ; 65%). Forty parents were categorized as authoritarian (22.7%), and only 5 (2.8%) were permissive. For secondary parents, 96 were authoritative (57.8%), 70 were authoritarian (35.6%), and 6 were permissive (3.6%).

Paired sample t-tests indicated that primary parents were significantly higher than secondary parents on scores for authoritative parenting [ $t(165) = 3.00, p = .003$ ], helicopter parenting [ $t(165) = 5.01, p < .001$ ], and closeness [ $t(165) = 7.12, p < .001$ ]. There were no significant differences between the primary and secondary parent on permissive or authoritarian parenting.

**College student dependent variables.** As can be seen in Table 11, the mean for college students' emotional autonomy was 35.05, with males reporting significantly higher emotional autonomy than females [ $t(175) = 2.35, p = .02$ ]. There were no significant gender differences for students' academic adjustment to college, or social adjustment to college.

Table 11. Descriptive statistics: Parenting and adjustment variables

	Aggregate		Males		Females	
	<i>M</i>	( <i>SD</i> )	<i>M</i>	( <i>SD</i> )	<i>M</i>	( <i>SD</i> )
<b>Parent 1 Variables</b>						
P1 Permissive	25.65	(6.69)	24.78	(6.61)	26.46	(6.74)
P1 Authoritative	35.41	(6.74)	34.76	(6.96)	35.97	(6.54)
P1 Authoritarian	29.44	(8.04)	30.66	(7.60)	28.29	(8.33)
P1 Helicopter	10.33	(4.26)	10.04	(4.21)	10.59	(4.33)
P1 Closeness	3.54	(.65)	3.49	(.63)	3.57	(.66)
<b>Parent 2 Variables</b>						
P2 Permissive	25.45	(6.60)	24.61	(7.01)	26.26	(6.14)
P2 Authoritative	34.33	(6.40)	31.04	(8.25)	28.74	(7.48)
P2 Authoritarian	29.44	(8.04)	30.66	(7.60)	28.29	(8.33)
P2 Helicopter	9.26	(3.85)	9.00	(3.70)	9.49	(4.00)
P2 Closeness	3.20	(.74)	3.28	(.74)	3.13	(.74)
<b>College Student Variables</b>						
Emotional Autonomy	35.05	(5.23)	36.01	(5.56)	34.18	(4.82)
College Academic Adj.	144.96	(26.29)	146.57	(25.36)	143.93	(27.00)
College Social Adj.	104.09	(19.05)	102.90	(18.61)	105.47	(19.36)

**Correlational Analyses.** Intercorrelations between study variables for primary and secondary parents can be found in Tables 12 and 13. As would be expected, authoritarian parenting scores were significantly negatively correlated with both permissive and authoritative parenting scores. Permissive and authoritative parenting levels were significantly positively correlated with one another and with parental closeness. Helicopter parenting was not correlated with any of Baumrind’s (1978) parenting styles and, unlike any of the traditional parenting styles, it was significantly correlated with the frequency of calls per week with primary and secondary

parents. The other parenting styles were not significantly correlated with any of the contact variables. Parental closeness was significantly positively correlated with all contact variables.

Also of note are the highly significant correlations between parenting style and emotional autonomy. It was expected that students who perceived higher levels of permissiveness and authoritativeness in their parents would be more emotionally autonomous. However, there were significantly negative correlations between emotional autonomy and levels of permissive, authoritative, and helicopter parenting for both sets of parents, as well as for frequency of cell phone calls. For secondary parents, total communication frequency was also negatively correlated with emotional autonomy. Also surprisingly, authoritarian parenting was significantly positively correlated with emotional autonomy.

Parenting styles and closeness were also significantly related to adjustment, such that authoritative parenting and closeness to parents were both positively associated with academic adjustment, while the opposite was true for authoritarian parenting levels. Parental closeness and total communication were positively related to social adjustment. Emotional autonomy was unrelated to both academic and social adjustment, while social and academic adjustment were positively related to one another. These relationships were probed with further analyses. See below for results.

Table 12. Intercorrelations between college student variables and primary parent variables (student-reported)

	1	2	3	4	5	6	7	8	9	10	11	12
<b>Parent Variables</b>												
1. Permissive	-											
2. Authoritative	.45***	-										
3. Authoritarian	-.66***	-.46**	-									
4. Helicopter	-.06	-.07	.14	-								
5. Closeness	.17*	.29***	-.09	.06	-							
6. Calls/week	.02	.08	.15	.19*	.23***	-						
7. Texts/week	.09	-.01	-.05	.13	.19*	.20**	-					
8. Emails/week	-.11	.14	.02	.11	.13	.03	.11	-				
9. Total com.	.09	.11	-.05	.14	.23**	.43***	.96***	.27**	-			
<b>Student Vars</b>												
10. Autonomy	-.28***	-.37***	.23**	-.27***	-.42***	-.23**	.01	-.06	-.07	-		
11. Academic Adj.	.08	.24**	-.16*	-.03	.23**	.04	.14	.05	.19*	-.04	-	
12. Social Adj.	.11	.07	-.11	-.05	.21**	.06	.16	.06	.19*	-.10	.50***	-

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Table 13. Intercorrelations between college student variables and secondary parent variables (student-reported)

	1	2	3	4	5	6	7	8	9	10	11	12
<b>Parent 2 Vars</b>												
1. Permissive	–											
2. Authoritative	.41***	–										
3. Authoritarian	-.63***	-.45***	–									
4. Helicopter	-.06	.02	.12	–								
5. Closeness	.18*	.39***	-.17*	.13	–							
6. Calls/wk	.02	.26**	.08	.25**	.28***	–						
7. Texts/wk	-.05	.00	.09	.09	.16	.50***	–					
8. Emails/wk	-.07	-.05	.13	.02	.10	.09	.06	–				
9. Total com.	-.02	.13	.03	.12	.19*	.55***	.97***	.24**	–			
<b>Student Vars</b>												
10. Autonomy	-.21**	-.37***	.19*	-.28***	-.36***	-.34***	-.11	-.05	-.18*	–		
11. Academic Adj.	.14	.33***	-.19*	-.11	.27***	-.01	.01	.11	.10	-.04	–	
12. Social Adj.	.09	.14	-.13	-.01	.22**	.05	.14	-.03	.16*	.10	.50***	–

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

## **Regression Analyses**

**Regression diagnostics.** Prior to conducting regression analyses for Research Questions 2 through 4 it was necessary to verify that the assumptions of linear regression had been sufficiently met in the data. The assumption of normality was assessed by reviewing the skewness and kurtosis values within the distributions of each dependent variable. Skewness and kurtosis values that met conventional cutoffs of 2 and 7, respectively, (Cohen, Cohen, West & Aiken, 2003) were accepted (see Table 14 for mean, standard deviation, skew, and kurtosis values for each dependent variable). Variables for which kurtosis values exceeded 7 were examined, and all were found to be positively skewed. These variables were then transformed using a log(10) monotonic transformation (Mosteller & Tukey, 1977). Permissive, authoritative, and authoritarian parenting styles were highly correlated and were therefore included in separate regression models to avoid problems with multicollinearity. Based on the tolerance and condition index within each regression model, there was no evidence of multicollinearity among the predictor variables within each model, and we can safely assume the resulting regression coefficients are not biased as a result (Cohen, et al., 2003).

Table 14. Regression Diagnostics

	<i>M</i>	<i>SD</i>	Range	Skew	Kurt
<b>Parent 1</b>					
P1 Calls/week	7.47	8.01	0-45	2.17	5.73
P1 Texts/week	30.09	30.66	0-155	1.55	2.43
P1 Emails/week	3.43	5.32	0-42	3.64	19.31
P1 Emails/week log(10)	.45	.40	0-1.63	.46	-.53
P1 Total comm/week	34.41	33.54	0-172	1.41	1.86
P1 FB satisfaction	3.23	.83	1-5	.01	.01
<b>Parent 2</b>					
P2 Calls/week	3.45	4.69	0-35	.19	18.19
P2 Calls/week log(10)	.50	.35	0-1.56	.22	-.25
P2 Texts/week	19.79	24.69	0-150	2.87	10.93
P2 Texts/week log(10)	1.05	.54	0-2.18	-.42	-.39
P2 Emails/week	2.61	5.28	0-47	4.86	33.82
P2 Emails/week log(10)	.34	.39	0-1.68	.95	.11
P2 Total comm/week	18.51	25.12	0-183	3.21	14.75
P2 Total comm/week log(10)	.98	.57	0-2.26	-.25	-.81
P2 FB satisfaction	3.26	.90	1-5	.41	.49
<b>College Student</b>					
Emotional Autonomy	35.05	5.23	20-46	-.17	.02
Academic Adj.	144.96	26.29	69-200	-.19	-.56
Social Adj.	104.09	19.05	42-136	-.46	-.31

**RQ2a: Parenting styles and frequency of communication.** In order to test whether parenting style predicted communication frequency via different electronic modes, separate hierarchical regression models were fit to the data for each parent (primary and secondary) and for each parenting style (permissive, authoritative, authoritarian, and helicopter) to predict the frequency of communication with parents via weekly cell phone, text, and email contacts, as well as total contacts with parents. Recall that parenting styles were entered in separate regressions to avoid the severe problems that arise with multicollinearity when they are entered in the same model.

Results are presented below in sections according to mode of contact. Within each section, I will present the significance of the final, full models, followed by the increase in the proportion of variation explained by adding parenting style in the final step of each model, first for primary parents, and then for secondary parents. In each section, the full model summary statistics and  $\Delta R^2$  scores for each step of each model will be presented in table form, along with a table of beta coefficients for the full models. Significant  $\Delta F$  scores associated with the addition of parenting style in the final step of the model are reported within the text. Tables that include the statistics for the nonsignificant models can be found in Appendix B. In the event that parenting style does not significantly contribute to a model, presentation of simpler significant models will follow, and tables for these models are presented in Appendix B. When interpreting coefficients, it is useful to note that the secondary parent contact variables are all log transformations of the raw data, as is the primary parent email contact variable. In addition, recall that there were only 18 African American participants in the sample, so results related to race should be interpreted with caution.

***Parenting style and frequency of parental cell phone contacts.*** For each hierarchical regression model predicting frequency of cell phone contacts per week with a parent, covariates were added according to conceptual groupings before parenting style was entered in the final step. The following student covariates were entered in Step 1 of in each model: gender (1=female), race (dummy-coded for Asian American and African American with European American as a reference group), socioeconomic status, year in school (dummy-coded for

freshmen compared to all other years), the number of days that passed between the beginning of the school year and the date of survey completion, and the distance in miles between Duke and students' home residences with their parent(s). In Step 2, students' reported total average cell phone calls per day was entered to account for students' personal levels of cell phone use overall (not limited to parental contacts). Next, a variable indicating whether the parent was a single parent was entered in Step 3, followed by parental closeness in Step 4, which was a separate parent variable of conceptual interest. In the final step of the model, parenting style (permissive, authoritative, authoritarian, or helicopter) was entered in Step 5 of each of the four separate models to assess the independent contribution of levels of parenting style on the frequency of cell phone contacts. Summary statistics for all full models are presented in Table 15; beta coefficients can be found in Table 16. Results are discussed below.

Table 15. Summary of separate hierarchical regression analyses predicting *cell phone contact* with parents from parenting styles

Final Predictor	Dependent Variable: Frequency of Cell Phone Contact with Parents					Full Model Summary Statistics			
	$\Delta R^2$ for each step					Total $R^2$	$F$	$df$	$p$
	Step 1 $\Delta R^2$	Step 2 $\Delta R^2$	Step 3 $\Delta R^2$	Step 4 $\Delta R^2$	Step 5 $\Delta R^2$				
P1 Parenting Style									
Permissive	.18***	.09***	.01	.03*	.001	.31	6.19	11, 154	<.001
Authoritative	.18***	.10***	.01	.03*	.001	.31	6.20	11, 154	<.001
Authoritarian	.17***	.10***	.01	.03*	.023*	.33	6.87	11, 154	<.001
Helicopter	.18***	.10***	.01	.03*	.021*	.33	7.07	11, 154	<.001
P2 Parenting Style									
Permissive	.07	.09***	.001	.14***	.007	.31	5.89	11, 146	<.001
Authoritative	.07	.11***	.001	.14***	.016†	.32	6.14	11, 146	<.001
Authoritarian	.07	.09***	.001	.14***	.015†	.32	6.09	11, 146	<.001
Helicopter	.06	.10***	.001	.13***	.023*	.31	5.99	11, 146	<.001

Note. † < .10, \* $p$  < .05, \*\*\* $p$  < .001, Variables were entered in the following order: Step 1: Gender, race, SES, year in school, number of days into semester survey was taken, distance from home. Step 2: Total overall cell phone use. Step 3: Single parent. Step 4: Parental closeness. Step 5: Parenting style

Table 16. Summary of separate hierarchical regression analyses of final, full models predicting cell phone contact with parents from parenting styles (beta coefficients)

Predictor	Dependent Variable= Cell Phone Contact											
	Permissive			Authoritative			Authoritarian			Helicopter		
	B	SEb	β	B	SEb	β	B	SEb	β	B	SEb	β
Parent 1	n = 166			n = 165			n = 166			n = 167		
Gender	2.61	1.35	.16	2.67	1.35	.16	2.95*	1.33	.18*	2.63*	1.32	.16*
Asian American	-1.57	1.30	-.08	-1.72	1.33	-.09	-1.97	1.29	-.11	-1.81	1.27	-.11
African American	5.99***	2.00	.22***	5.96***	1.98	.22***	4.58*	2.14	.17*	6.41*	1.87	.17*
Freshman	.60	1.14	.04	.65	1.14	.04	.59	1.12	.04	.66	1.12	.04
Days	-.02	.02	-.08	-.02	.02	-.08	-.02	.02	-.08	-.02	.02	-.08
Distance	-.001	.00	-.08	-.001	.00	-.09	-.001	.00	-.07	-.001	.00	-.07
SES	.11	.07	1.10	.12	.07	1.10	.12	.07	1.10	.08	.07	1.10
Total cell use	.45***	.10	.31***	.45***	.10	.31***	.45***	.10	.31***	.43***	.10	.31***
Single parent	-1.76	1.45	-.09	-1.66	1.46	-.08	-2.02	1.46	-.10	-1.63	1.41	-.10
Parental closeness	2.18*	.88	.17*	2.26*	.91	.17*	2.28**	.91	.18**	2.09**	.84	.18**
Parenting Style	-.04	.09	-.03	-.05	.09	-.04	.17*	.09	.17*	.28*	.13	.15*
Parent 2	n = 158			n = 158			n = 158			n = 159		
Gender	.03	.06	.04	.00	.06	.00	.03	.06	.04	.03	.06	.04
Asian American	-.10	.06	-.12	-.08	.06	-.10	-.12	.06	-.12	-.12	.06	-.12
African American	.08	.10	.06	.13	.10	.10	.06	.10	.06	.06	.10	.02
Freshman	.01	.05	.02	.01	.05	.02	.01	.05	.02	.01	.05	.01
Days	-.002	.01	-.17	-.002	.01	-.17	-.002	.01	-.17	-.002	.01	-.15
Distance	-.001	.00	-.001	-.001	.00	-.03	-.001	.00	-.03	-.001	.00	-.03
SES	.002	.00	.05	.002	.00	.02	.002	.00	.02	.002	.00	.04
Total cell use	.02***	.00	.27***	.02***	.00	.27***	.02***	.00	.27***	.02***	.00	.26***
Single parent	-.01	.07	-.01	-.004	.07	-.01	-.02	.07	-.01	-.02	.07	-.01
Parental closeness	.19***	.03	.40***	.16***	.04	.33***	.20***	.04	.33***	.20***	.04	.36***
Parenting Style	-.005	.00	-.09	.008	.00	.15	.006	.00	.13	.014*	.00	.16*

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

*Primary parents' parenting styles as predictors of cell phone contact.* The results of the final, full hierarchical regression models for each parenting style indicated that the collection of variables in each of the four models explained a significant proportion of variation in frequency of cell phone contacts with the primary parent per week (see Tables 15 and 16 above for full model summary statistics and beta coefficients). Results indicated that the addition of parenting style in the final step of the permissive and authoritative parenting style models did not significantly increase the proportion of variation explained in the respective models. In contrast,

the addition of authoritarian parenting [ $\Delta R^2 = .02$ ,  $\Delta F(1, 154) = 5.31$ ,  $p = .02$ ] and helicopter parenting [ $\Delta R^2 = .02$ ,  $\Delta F(1, 155) = 4.79$ ,  $p = .03$ ] explained small but significant increases in the proportion of variation in frequency of cell phone contact with primary parents in their respective models. (Table B1 in Appendix B presents the  $\Delta R^2$  and  $\Delta F$  values associated with the specific addition of each parenting style variable in the final step of each of the full models, including nonsignificant findings).

Higher levels of primary parents' authoritarian parenting scores were significantly associated with more frequent cell phone contact with primary parents [ $b = .17$ ,  $t(154) = 2.31$ ,  $p = .02$ ]. In this model, gender and race were also both significant predictors. Females reported 2.95 more cell phone contacts per week with their primary parents than males [ $b = 2.95$ ,  $t(154) = 2.22$ ,  $p = .03$ ], and African American students reported 4.58 more cell phone contacts than European American students [ $b = 4.58$ ,  $t(154) = 2.25$ ,  $p = .03$ ]. Total cell phone use was positively related to parental cell phone contact [ $b = .45$ ,  $t(154) = 4.57$ ,  $p < .001$ ]. Parental closeness also emerged as a significant predictor [ $b = 2.28$ ,  $t(154) = 2.66$ ,  $p = .009$ ].

Similarly, in a separate hierarchical regression model, higher levels of helicopter parenting were also significantly associated with greater cell phone contact with primary parents [ $b = .28$ ,  $t(155) = 2.19$ ,  $p = .03$ ]. In this model, gender was a significant predictor [ $b = 2.63$ ,  $t(155) = 2.00$ ,  $p = .04$ ], as was race, with African American students reporting greater cell phone contact with parents per week than European American students [ $b = 6.41$ ,  $t(155) = 3.42$ ,  $p = .001$ ]. Again, total overall cell phone use was positively related to parental cell phone contact [ $b$

= .43,  $t(155) = 4.40$ ,  $p < .001$ ], in addition to parental closeness [ $b = 2.09$ ,  $t(155) = 2.49$ ,  $p = .01$ ].

*Closeness to primary parents as a predictor of frequency of cell phone contact.* For the permissive and authoritative models in which the entry of parenting style in the final step did not increase the proportion of variation explained, simpler models were those in which the collection of variables entered through Step 4 of the model explained 31% of the variation in cell phone contact frequency [ $R^2 = .31$ ,  $F(10, 155) = 6.83$ ,  $p < .001$ ]<sup>1</sup>. The addition of parental closeness in Step 4 accounted for a significant increase in the proportion of variation in the permissive model [ $R^2 = .31$ ,  $\Delta R^2 = .03$ ,  $\Delta F(1, 155) = 5.96$ ,  $p = .02$ ], and in the authoritative model [ $R^2 = .31$ ,  $\Delta R^2 = .03$ ,  $\Delta F(1, 154) = 6.02$ ,  $p = .03$ ]. Greater parental closeness scores were associated with more frequent cell phone contact with primary parents in both the permissive [ $b = 2.18$ ,  $t(155) = 2.47$ ,  $p = .02$ ] and authoritative models [ $b = 2.13$ ,  $t(154) = 2.45$ ,  $p = .02$ ]. See Table B2 in the Appendix for beta coefficients for the simpler parental closeness models predicting frequency of cell phone contact with primary parents.

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<sup>1</sup> Note: Values were the same in both the permissive and authoritative models, but the authoritative model had one fewer degree of freedom

*Secondary parents' parenting styles as predictors of cell phone contact.* Each separate final, full hierarchical regression model for permissive, authoritative, authoritarian, and helicopter parenting predicting cell phone contact was significant for secondary parents (see Table 15 above). Once again, however, the addition of permissive parenting style in the final step did not significantly increase the proportion of variation explained in the permissive model, as can be seen in Table B1 in Appendix B. The addition of authoritative parenting in the final step was approaching significance in its ability to explain an increased proportion of the variation, but did not meet the  $p = .05$  standard [ $\Delta R^2 = .02$ ,  $\Delta F(1, 146) = 3.51$ ,  $p = .06$ ], as was the case with authoritarian parenting in a separate model [ $\Delta R^2 = .02$ ,  $\Delta F(1, 146) = 3.12$ ,  $p = .08$ ]. However, the addition of helicopter parenting in the final step of its model significantly explained an increased proportion of the variation in frequency of cell phone contact with the secondary parent [ $\Delta R^2 = .02$ ,  $\Delta F(1, 147) = 4.79$ ,  $p = .03$ ].

Greater levels of helicopter parenting predicted higher frequency of cell phone contacts with secondary parents [ $b = .01$ ,  $t(147) = 2.19$ ,  $p = .03$ ]. Total cell phone use [ $b = .02$ ,  $t(147) = 3.66$ ,  $p < .001$ ] and parental closeness [ $b = .17$ ,  $t(147) = 5.08$ ,  $p = .03$ ] were also significant predictors that were positively related to cell phone contact frequency with the secondary parent. In contrast to the results for primary parents' helicopter parenting, gender and race were not significant predictors. See Table 16 for beta coefficients for all predictors in all models.

*Closeness to secondary parents as a predictor of frequency of cell phone contact.* As described for primary parents above, for the models in which parenting style was not a significant

predictor, the simpler models ending with the addition of parental closeness in Step 4 explained significant proportions of the variation in frequency of cell phone contact with the secondary parent in the permissive [ $R^2 = .31$ ,  $F(10, 147) = 6.30$ ,  $p < .001$ ], authoritative [ $R^2 = .30$ ,  $F(10, 147) = 29.58$ ,  $p < .001$ ], and authoritarian models [ $R^2 = .30$ ,  $F(10, 147) = 6.30$ ,  $p < .001$ ]. The significant addition of parental closeness in Step 4 indicated positive relationships between parental closeness and cell phone contacts with secondary parents; values were the same in the three models [ $\Delta R^2 = .14$ ,  $\Delta F(1, 147) = 29.58$ ,  $p < .001$ ]. See Table B3 in Appendix B for beta coefficient values for these models with secondary parents.

*Summary of regression analyses for parenting style predicting frequency of cell phone contact.* For primary parents, higher authoritarian and helicopter parenting scores were both significant predictors of more frequent cell phone contact, particularly among female students. For secondary parents, helicopter parenting was the only parenting style that significantly predicted frequency of parental cell phone contacts, although both authoritative and authoritarian parenting were approaching significance in their positive associations with number of cell phone contacts. Total cell phone use and parental closeness were both significant predictors positively associated with cell phone contact in every model. Models for which the addition of parenting style did not account for a significant increase in the proportion of variation were better explained by simpler models of parental closeness.

*Parenting style and frequency of text messaging contact.* To examine whether parenting styles predict frequency of text messaging with parents, separate hierarchical

regressions were run for each parenting style (permissive, authoritative, authoritarian, and helicopter) and for each parent (primary and secondary). For each hierarchical regression model predicting frequency of text messaging contacts per week with a parent, variables were entered in the same order they were entered in the previous regression analyses, with the exception that students' reported total average text messaging use was entered in Step 2 (instead of average cell phone use). Only students who reported that their parents used text messaging were included in this set of analyses ( $n_{p1} = 145$ ;  $n_{p2} = 119$ ). Results from the eight separate hierarchical regressions indicated that none of the full models, nor any of the simpler versions of the models, was significant in predicting the frequency of text messaging with parents. Because summary statistics for all full models were nonsignificant, they are presented in Table B4 in the Appendix rather than within the text.

***Parenting style and frequency of email contact.*** Separate hierarchical regressions were run for each parenting style (permissive, authoritative, authoritarian, and helicopter) predicting frequency of email contacts per week with a parent. Variables were entered as in the previous set of regressions, but without a step controlling for total text messaging use or total email use, therefore there were only four steps in this set of regressions. Only students who reported that their parents used email were included in this set of analyses ( $n_{p1} = 156$ ;  $n_{p2} = 152$ ). Summary statistics for all full models are presented below in Table 17, and beta coefficients can be found in Table 18. The dependent variable of total email contact with parents is a log(10) transformation score in all analyses. Results are discussed below.

*Table 17.* Summary of separate hierarchical multiple regressions predicting frequency of *email contact* with parents from parenting styles

Final Predictor	Dependent Variable: Frequency of Emailing with Parents							
	$\Delta R^2$ for each step				Full Model Summary Statistics			
	Step 1 $\Delta R^2$	Step 2 $\Delta R^2$	Step 3 $\Delta R^2$	Step 4 $\Delta R^2$	Total $R^2$	$F$	$df$	$p$
Parent 1 Parenting Style								
Permissive	.15**	.003	.005	.002	.16	2.62	10, 134	.01
Authoritative	.15**	.003	.005	.004	.16	2.55	10, 134	.01
Authoritarian	.15**	.003	.005	.000	.16	2.48	10, 134	.01
Helicopter	.15**	.003	.006	.004	.16	2.63	10, 134	.01
Parent 2 Parenting Style								
Permissive	.08	.00	.02	.02	.12	1.83	10, 132	.06
Authoritative	.09	.00	.02	.01	.11	1.70	10, 132	.09
Authoritarian	.09	.00	.02	.05**	.16	2.54	10, 132	.01
Helicopter	.08	.00	.02	.00	.10	1.44	10, 132	.17

*Note.* \*\*  $p < .01$ , Variables were entered in the following order: Step 1: Gender, race, SES, year in school, number of days into semester survey was taken, distance from home. Step 2: Single parent. Step 3: Parental closeness. Step 4: Parenting style

Table 18. Summary of separate hierarchical multiple regressions predicting frequency of email contact with parents from parenting styles (beta coefficients)

Dependent Variable = Email Contact												
Predictor	Permissive			Authoritative			Authoritarian			Helicopter		
	B	SE b	$\beta$	B	SE b	$\beta$	B	SE b	$\beta$	B	SE b	$\beta$
Parent 1	n = 145			n = 165			n = 166			n = 167		
Gender	.00	.08	.05	-.01	.08	-.17	-.01	.08	-.10	.01	.08	.06
Asian American	-.02	.08	-.27	-.01	.08	-.10	-.02	.08	-.21	-.02	.08	-.31
African American	-.17	.11	-1.50	-.13	.11	-1.17	-.16	.12	-1.36	-.15	.11	-1.36
Freshman	.08	.07	1.18	.08	.07	1.16	.07	.07	1.09	.07	.07	1.09
Days	-.03*	.00	-2.07*	-.00*	.00	-2.11*	.00*	.00	-2.10*	-.00	.00	-1.94
Distance	-.00*	.00	-2.36*	-.00*	.00	-2.42*	-.00*	.00	-2.39*	-.00*	.00	-2.30*
SES	.01	.00	1.78	.01	.00	1.69	.01	.00	1.80	.0	.00	1.74
Single parent	-.05	.09	-.55	-.05	.09	-.58	-.05	.09	-.53	-.05	.09	-.56
Parental closeness	.06	.06	1.04	.04	.06	.63	.05	.05	.91	.05	.05	.94
Parenting Style	-.00	.01	-.52	.00	.01	.80	.00	.00	.20	.01	.01	.83
Parent 2	n = 158			n = 158			n = 158			n = 159		
Gender	-.02	.08	-.27	-.02	.08	-.22	-.01	.08	-.14	-.04	.08	-.52
Asian American	-.13	.08	-1.59	-.13	.08	-1.67	-.16*	.08	-2.03*	-.10	.08	-1.27
African American	-.25	.13	-1.98	-.23	.13	-1.81	-.29*	.12	-2.36*	-.20	.13	-1.59
Freshman	.06	.07	.94	.07	.07	.97	.07	.07	1.08	.04	.07	.54
Days	-.00	.00	-.55	-.00	.00	-.56	-.00	.00	-.57	-.00	.00	-.55
Distance	-.00	.00	.78	-.00	.00	.60	-.00	.00	.91	.00	.00	.92
SES	.01*	.01	2.13*	.01*	.01	2.21*	.01*	.01	2.37	.01*	.01	2.23*
Single parent	-.00	.09	-.01	-.01	.09	-.05	-.02*	.09	-.19*	-.00	.09	-.04
Parental closeness	.09	.05	1.99	.10	.05	1.97	.10*	.04	2.29*	.07	.05	1.51
Parenting Style	-.01	.01	-1.49	-.01	.01	-1.06	.01**	.01	2.93**	.00	.01	.26

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

*Primary parents' parenting styles as predictors of email contact.* Results of the four separate hierarchical regressions indicated that although each of the full models was significant, the addition of parenting style in the final step (Step 4) did not explain a significant proportion of the variation in frequency of email contact with primary parents in any of the models, as can be seen in the tables above (Step 5 increase values are in Appendix Table B1). For each model, the only significant  $\Delta R^2$  scores were associated with the set of covariates entered in Step 1. Specifically, the number of days into the semester the survey was completed and the distance

from home were the only significant predictors in each of the simpler models, and they were the only significant predictors in any of the final, full models, as well.

*Secondary parents' parenting styles as predictors of email contact.* None of the full models for permissive, authoritative, or helicopter parenting significantly predicted frequency of email contact with the secondary parent (see Table 17 for full model summary statistics and Table B1 in the Appendix for the contributions of adding each parenting style to the final models in Step 4). The final, full model for authoritarian parenting style, however, was significant [ $R^2 = .16$ ,  $F(10, 132) = 2.54$ ,  $p = .01$ ]. In this model, the addition of authoritarian parenting style in Step 4 explained a significant increase in the proportion of variation [ $\Delta R^2 = .05$ ,  $\Delta F(1, 132) = 8.57$ ,  $p = .004$ ], with greater authoritarian parenting style scores predicting more frequent email contact with secondary parents [ $b = .01$ ,  $t(132) = 2.93$ ,  $p = .004$ ].

*Summary of parenting style and email contact.* Primary parents' parenting style was not predictive of frequency of email contact with primary parents. For secondary parents, permissive, authoritative, and helicopter parenting styles were not significant predictors of frequency of email contact with primary parents either. However, secondary parents' authoritarian parenting scores were significantly and positively associated with email contact.

*Parenting style and frequency of total contact.* For each hierarchical regression model predicting frequency of total parental contacts per week (which included cell phone calls, text messages, and emails) covariates were once again added according to conceptual groupings as done in the previous regressions: student demographic covariates were entered in Step 1 of each

model: gender (1=female), race (dummy-coded for Asian American and African American with European American as a reference group), socioeconomic status, year in school (dummy-coded for freshmen compared to all other years), the number of days that passed between the beginning of the school year and the date of survey completion, and the distance in miles between Duke and students' home residences with their parent(s). In Step 2, students' reported total average cell phone calls per day and reported average number of text messages per day were both entered to account for students' personal levels of cell phone and texting use overall (not limited to parental contacts). Next, a variable indicating whether the parent was a single parent was entered in Step 3, followed by student-reported parental closeness in Step 4. In the final step of the model, parenting style was added to examine its unique contribution to the total frequency of parental contact per week. Summary statistics for all full models are presented in Table 19, and beta coefficients can be found in Table 20. Results are discussed below.

Table 19. Summary of separate hierarchical multiple regressions predicting frequency of *total contact* with parents from parenting styles

Final Predictor	Dependent Variable: Frequency of Total Contact with Parents								
	$\Delta R^2$ for each step					Full Model Summary Statistics			
	Step 1 $\Delta R^2$	Step 2 $\Delta R^2$	Step 3 $\Delta R^2$	Step 4 $\Delta R^2$	Step 5 $\Delta R^2$	Total $R^2$	$F$	$df$	$p$
P1 Parenting Style									
Permissive	.12**	.07**	.01	.03*	.00	.23	3.60	12, 147	<.001
Authoritative	.12**	.07**	.01	.03*	.00	.23	3.60	12, 147	<.001
Authoritarian	.12**	.07**	.01	.03*	.00	.23	3.62	12, 147	<.001
Helicopter	.12**	.07**	.01	.05**	.00	.25	4.14	12, 147	<.001
P2 Parenting Style									
Permissive	.07	.05*	.00	.11**	.00	.23	3.58	12, 141	<.001
Authoritative	.07	.05*	.00	.11**	.01	.24	3.68	12, 141	<.001
Authoritarian	.07	.05*	.00	.11**	.00	.23	3.58	12, 141	<.001
Helicopter	.07	.05*	.00	.11**	.00	.22	3.29	12, 141	<.001

Note. \* $p < .05$ , \*\* $p < .01$ , Variables were entered in the following order: Step 1: Gender, race, SES, year in school, number of days into semester survey was taken, distance from home. Step 2: Total overall cell phone use, total overall text messaging use. Step 3: Single parent. Step 4: Parental closeness. Step 5: Parenting style

Table 20. Hierarchical regression models predicting *total contact* from parenting style (beta coefficients)

Predictor	Dependent Variable = Total Contact											
	Permissive			Authoritative			Authoritarian			Helicopter		
	B	SE b	$\beta$	B	SE b	$\beta$	B	SE b	$\beta$	B	SE b	$\beta$
Parent 1	n = 166			n = 165			n = 166			n = 167		
Gender	6.24	6.02	1.04	6.52	6.00	1.09	6.42	6.00	1.07	9.60	5.99	1.60
Asian American	-9.30	5.91	-1.57	-9.54	5.97	-1.50	-9.40	5.94	-1.58	-9.40	5.88	-1.60
African American	-.05	8.82	-.01	-.94	8.72	-.11	-1.09	9.10	-.02	5.13	8.40	.61
Freshman	7.00	5.09	1.38	6.95	5.09	1.37	6.87	5.05	1.36	6.09	5.07	1.20
Days	-.14	.10	-1.36	-.14	.10	-1.35	-.14	.10	-1.37	-.11	.10	-1.10
Distance	-.00	.00	-.59	-.00	.00	-.60	-.00	.00	-.56	-.00	.00	-.38
SES	.28	.33	.85	.29	.33	.87	.28	.33	.85	.26	.33	.81
Total cell use	.91*	.44	2.08*	.93*	.44	2.10*	.92	.44	2.12*	.86	.44	1.97
Total text use	.07**	.03	2.65**	.07**	.03	2.67**	.07	.03	2.68**	.07**	.03	2.60**
Single parent	-4.56	6.39	-.71	-4.46	6.42	-.69	-4.74	6.39	-.74	-2.11	6.33	-.33
Parental closeness	9.60*	3.90	2.46*	10.10*	4.02	2.52*	9.81*	3.82	2.51*	11.09**	3.76	2.95**
Parenting Style	.09	.39	.24	-.10	.40	-.26	.06	.33	.19	.65	.58	1.14
Parent 2	n = 158			n = 158			n = 158			n = 159		
Gender	.07	.10	.68	.04	.10	.43	.07	.10	.69	.05	.10	.46
Asian American	-.20	.10	-2.07	-.18	.10	-1.87	-.21	.10	-2.15	-.19	.10	-1.96
African American	-.08	.16	-.51	-.04	.16	-.52	-.09	.16	-.51	.03	.16	.16
Freshman	-.01	.09	-.10	-.01	.08	-.09	-.01	.09	-.07	-.03	.09	-.33
Days	-.00	.00	-.57	-.00	.00	-.53	-.00	.00	-.55	-.00	.00	-.57
Distance	-.00	.00	-.86	-.00	.00	-.61	-.00	.00	-.80	-.00	.00	-.68
SES	.01	.01	1.33	.01	.01	1.12	.01	.01	1.37	.01	.01	1.31
Total cell use	.01	.01	1.31	.01	.01	1.27	.01	.01	1.30	.01	.01	1.14
Total text use	.00*	.00	2.53*	.00*	.00	2.52*	.00*	.00	2.56*	.00*	.00	2.30*
Single parent	.04	.11	.34	.04	.11	.36	.04	.11	.28	.07	.11	.63
Parental closeness	.26***	.06	4.53***	.22***	.06	3.65	.26***	.06	4.53***	.24***	.06	4.21***
Parenting Style	-.01	.01	-.74	.01	.01	1.24	.00	.01	-.74	.01	.01	.89

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Parenting styles predicting total contact with primary and secondary parents. As shown in Table 19 above, results from the eight separate hierarchical regressions indicated that each of the full models was significant. However, the addition of parenting style in the final step did not significantly increase the proportion of variation explaining frequency of total contact in any of the eight parenting style models. See Table B1 in the Appendix for the nonsignificant  $\Delta F$  values associated with the addition of parenting style in Step 5 of each model. The beta coefficient

values for each of the full parenting style models predicting to frequency of total contact are also displayed in above in Table 20.

*Parental closeness predicting total contact with primary and secondary parents.* For each of the eight hierarchical regressions predicting total parental contact from parenting style (four for each parent), the simplest model was that in which the collection of variables entered through Step 4 explained a significant proportion of the variation in total contact frequency. Each of the eight simpler models explained 23-25% of the variation in total parental contact frequency ( $p < .001$  in all models). The addition of parental closeness in Step 4 of the four primary parent models explained an increase of an additional 3-5% of the variation ( $p < .01$ ), and an additional 11% of the variation in each of the secondary parent models ( $p < .001$ ). (See Appendix Table B5 for total  $R^2$  and  $F$  values for each of the eight simpler models associated with the specific addition of parental closeness in the final step of each of the simpler models.)

Closeness to primary parents was positively associated with total contacts, such that for every standard deviation increase in parental closeness, students reported nearly an additional 10 contacts with their primary parents per week (see Table B6 in the Appendix for exact beta coefficients associated with each simpler model). The only other significant predictors in the models were total overall cell contact and total overall text contact, both of which were positively associated with total contact. Results for secondary parents were similar, with higher ratings for parental closeness predicting greater frequency of contact with secondary parents. In these

models, students' total text messaging was positively associated with total contact, but total cell phone use scores were not.

*Summary of regression analyses for parenting style predicting total contact with primary and secondary parents.* None of the four parenting styles explained a significant increase in the variation of total contacts with either primary or secondary parents. Students who reported being closer to their parents had more frequent contact with their parents.

#### **RQ 2b: Parenting styles and Facebook connections between college students and their parents**

*Parenting style predicting parent-student Facebook connections.* For students whose parent(s) had Facebook profiles ( $n_{P1} = 92$ ;  $n_{P2} = 63$ ), logistic regression analyses were conducted to predict the probability that a student would be friends with his or her (primary or secondary) parent on Facebook using each parenting style scale score as the predictor in separate models. None of the parenting styles (permissive, authoritative, authoritarian, or helicopter) significantly predicted whether or not students were friends with their primary parents or secondary parents on Facebook. See Appendix Table B7 for the nonsignificant logistic regression coefficients, Wald tests, and odds ratios for each of the parenting style predictors.

*Parenting style predicting initiation of Facebook connections.* Among students who were friends with their parents on Facebook ( $n_{P1} = 71$ ;  $n_{P2} = 48$ ), an additional set of logistic regression analyses were employed to predict whether the Facebook relationship was initiated by the parent or the student using parenting style as a predictor. Table 21 displays the logistic

regression coefficients, Wald tests, and odds ratios from these regressions. Results are discussed below.

*Table 21.* Separate logistic regression models predicting parent initiation of Facebook friendship from parenting style

Predictor	<i>B</i>	<i>S.E.</i>	Wald	<i>p</i>	Odds Ratio
<b>Primary Parent</b>					
P1 Permissive	-.11	.05	4.99	.025*	.90
P1 Authoritative	-.20	.07	7.45	.006**	.82
P1 Authoritarian	.03	.04	.68	.41	1.03
P1 Helicopter	.04	.04	.33	.57	1.04
<b>Secondary Parent</b>					
P2 Permissive	-.06	.05	1.38	.24	.94
P2 Authoritative	-.01	.06	.02	.89	.99
P2 Authoritarian	-.03	.05	.55	.46	1.03
P2 Helicopter	.001	.08	.00	.99	1.00

*Note:* \*  $p < .05$ , \*\* $p < .01$

*Permissive parenting and initiation of Facebook connection.* When examining the permissive parenting style among primary parents, a test of the full model against a constant only model was statistically significant [ $\chi^2(1, 69) = 5.75, p = .02$ ]. The odds ratio for permissive parenting revealed that for each one-point increase on the permissive parenting scale, the odds that the student (rather than the parent) will initiate a friend request increase by a multiplicative factor of .90. Therefore, more permissive primary parents were more likely to receive a friend request from their children than to initiate the friend request themselves. This finding did not hold for secondary parents [ $\chi^2(1, 48) = 1.98, p = .16$ ].

*Authoritative parenting style and initiation of Facebook connection.* Similar results were found for authoritative parenting style predicting Facebook friendship initiation by primary parents. A test of the full model indicated that higher scores for authoritative style reliably distinguished between parent-initiated friend requests and student-initiated friend requests [ $\chi^2(1, 69) = 11.20, p = .001$ ]. The odds ratio for authoritative parenting indicated that when the authoritative parenting score is raised by one point, the odds that the student will initiate a friend request increases .82 times. That is, more authoritative primary parents are more likely to receive a friend request on Facebook from their child than to initiate it. Again, this was not a significant finding for secondary parents [ $\chi^2(1, 48) = 2.77, p = .10$ ].

*Authoritarian and helicopter parenting styles and initiation of Facebook friendship.* Authoritarian parenting style did not significantly predict whether the parent or student initiated the Facebook friend request from primary [ $\chi^2(1, 71) = .70, p = .40$ ] or secondary [ $\chi^2(1, 48) = 2.63, p = .11$ ] parents. Helicopter parenting was not significant among primary [ $\chi^2(1, 71) = .34, p = .56$ ] or secondary [ $\chi^2(1, 48) = .00, p = .98$ ] parents either.

*Parenting style predicting students' satisfaction with Facebook friendship with parents.* Separate hierarchical regression models were employed to test whether parenting style predicted students' reported satisfaction with their Facebook connections with their parents. Among students who were friends with their parents on Facebook, separate hierarchical regression models were fit to the data. Again, gender (1=female), race (dummy-coded for Asian American and African American with European American as a reference group), socioeconomic status, year

in school (dummy-coded for freshmen compared to all other years), the number of days that passed between the beginning of the school year and the date of survey completion, and the distance in miles between Duke and students' home residences with their parent(s) were entered in the first step. A variable indicating whether the parent was a single parent was entered in Step 2, followed by parental closeness in Step 3. In the final step of the model, parenting style was entered in Step 4 to assess the independent contributions of levels of specific parenting styles (permissive, authoritative, authoritarian, and helicopter) on students' levels of satisfaction with their parent/child Facebook friendships. Tables 22 and 23 present summary statistics and beta coefficients for the models. Results are discussed below.

*Table 22.* Summary of hierarchical regression analyses predicting satisfaction with parent/child Facebook friendship from parenting style

Final Predictor	DV = Facebook friendship satisfaction							
	$\Delta R^2$ for each step				Full Model Summary Statistics			
	Step 1 $\Delta R^2$	Step 2 $\Delta R^2$	Step 3 $\Delta R^2$	Step 4 $\Delta R^2$	Total $R^2$	$F$	$df$	$p$
Parent 1 Parenting Style								
Permissive	.12	.00	.09	.00	.21	1.53	10, 56	.15
Authoritative	.12	.00	.09	.03	.24	1.73	10, 55	.10
Authoritarian	.12	.00	.09	.00	.21	1.48	10, 56	.17
Helicopter	.12	.00	.01**	.06*	.29	2.17*	10, 54	.03*
Parent 2 Parenting Style								
Permissive	.19	.09	.13*	.03	.43	2.50*	10, 34	.02*
Authoritative	.18	.09	.13*	.04	.43	2.57*	10, 34	.02*
Authoritarian	.18	.09	.13*	.00	.40	2.23*	10, 34	.04*
Helicopter	.17	.09	.13*	.01	.40	2.21*	10, 33	.04*

*Note.* \* $p < .05$ , \*\* $p < .01$ , Variables were entered in the following order: Step 1: Gender, race, SES, year in school, number of days into semester survey was taken, distance from home. Step 2: Single parent. Step 3: Parental closeness. Step 4: Parenting style

Table 23. Hierarchical regression analyses predicting students' satisfaction with Facebook friendship with primary parent from helicopter parenting (beta coefficients)

Predictor	DV = Satisfaction with Facebook Relationship (P1)		
	<i>B</i>	<i>SE b</i>	$\beta$
Gender	.10	.25	.06
Asian American	.24	.26	.12
African American	.43	.34	.16
Freshman	-.29	.20	-.14
Days	.00	.00	.14
Distance	.00	.00	-.14
SES	.01	.01	.07
Single parent	.18	.26	.09
Parental closeness	.56**	.17	.43**
Helicopter Parenting	-.05*	.03	-.26*

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

*Facebook friendship satisfaction with primary parents.* The separate final, full hierarchical regression models for permissive, authoritative, and authoritarian parenting did not explain a significant proportion of the variation in Facebook relationship satisfaction with primary parents. In contrast, results of the overall hierarchical regression model with helicopter parenting as the final predictor variable indicated that the collection of variables in the full model accounted for 29% of the variation in primary parent Facebook friendship satisfaction. The addition of helicopter parenting in Step 4 accounted for a significant increase in the proportion of variation explained [ $\Delta R^2 = .06$ ,  $\Delta F(1, 54) = 4.43$ ,  $p = .04$ ], with increased helicopter parenting scores predicting decreased satisfaction with the Facebook friendship with the primary parent [ $b = -.05$ ,  $t(54) = -2.11$ ,  $p = .04$ ]. In this model, parental closeness was also a significant predictor,

with results indicating a positive relationship between parental closeness and Facebook friendship satisfaction [ $b = .56, t(54) = 3.28, p = .002$ ]. No other variables in the model were significant predictors (see Table 23 for coefficients).

*Facebook friendship satisfaction with secondary parents.* The collection of variables in each of the final, full models for parenting style predicting Facebook friendship satisfaction with secondary parents did explain a significant proportion of the variation (see Table 22 for values). However, the addition of parenting style in Step 4 did not account for a significant increase in proportion of variation in any of the models. Instead, in each hierarchical regression, a simpler model that included closeness to parenting (but did not include parenting style) explained 40% of the variation [ $\Delta R^2 = .13, \Delta F(1, 35) = 7.24, p = .01$ ]. Again, higher scores for parental closeness predicted higher scores for satisfaction with the Facebook friendship [ $b = .50, t(35) = 2.69, p = .01$ ]. None of the other predictors in the models were significant.

*Summary of parent-student Facebook friendship findings.* Parenting style did not significantly predict whether or not a student was connected to his/her parent via a Facebook friendship. Primary parents' higher permissive and authoritative scores predicted that the student would initiate the Facebook friendship, rather than the parent. Students who rated their parents higher on helicopter parenting were less satisfied with their Facebook friendships with their parents.

**RQ3: The role of cell phone contact in the relationships between parenting styles and emotional autonomy**

In order to explore how cell phone contact may explain or change the relationship between parenting style and emotional autonomy, both mediational and moderational analyses were conducted. Cell phone contact (rather than total contact) was used as a mediator/moderator because the regressions in the previous section suggest that it is the mode of communication that is most strongly related to parenting styles. Results of the investigations of cell phone contact as a mediator will be described first, separately by primary and secondary parent. Moderational analyses will be presented thereafter.

*Cell phone contact with parents as a mediator of the relationship between parenting style and college students' emotional autonomy.* Nonparametric bootstrapping analyses (see Preacher & Hayes, 2004; Preacher, Rucker, & Hayes, 2007) were employed to test the indirect effects of cell phone contact frequency on the relationship between parenting style and emotional autonomy. Separate models were fitted for the four different parenting styles (permissive, authoritative, authoritarian, and helicopter) for each parent. There were no significant indirect effects found for any of the parenting styles for either parent, indicating that the amount of total weekly cell phone contact with parents does not mediate the relationship between parenting style and college students' emotional autonomy. In fact, there were no instances in which both the A and B paths in the model were significant (see Figures 10 and 11). However, some significant direct effects for the relationships between parenting style and emotional autonomy did emerge from the analyses, as described below.

*Primary parents.* As previously reported in the results for Research Question 2a, neither permissive nor authoritative parenting style significantly predicted total cell phone contacts with the primary parent, but authoritarian and helicopter parenting were both positively associated with the frequency of parental cell phone contacts. In each of the primary parent models, the frequency of weekly cell phone contact with the primary parent did not significantly predict emotional autonomy. Results from the separate models indicated that each parenting style for primary parents was significantly related to students' emotional autonomy. Permissive parenting was significantly negatively associated with emotional autonomy [ $b = -.17, t(155) = -3.02, p = .003$ ], as was authoritative parenting [ $b = -.21, t(154) = -3.67, p < .001$ ], and helicopter parenting [ $b = -.27, t(155) = -3.28, p = .001$ ]. Surprisingly, authoritarian parenting was the only style that was positively related to emotional autonomy [ $b = .14, t(155) = 2.88, p = .005$ ]. Individual path coefficients are displayed in Figure 10 below.

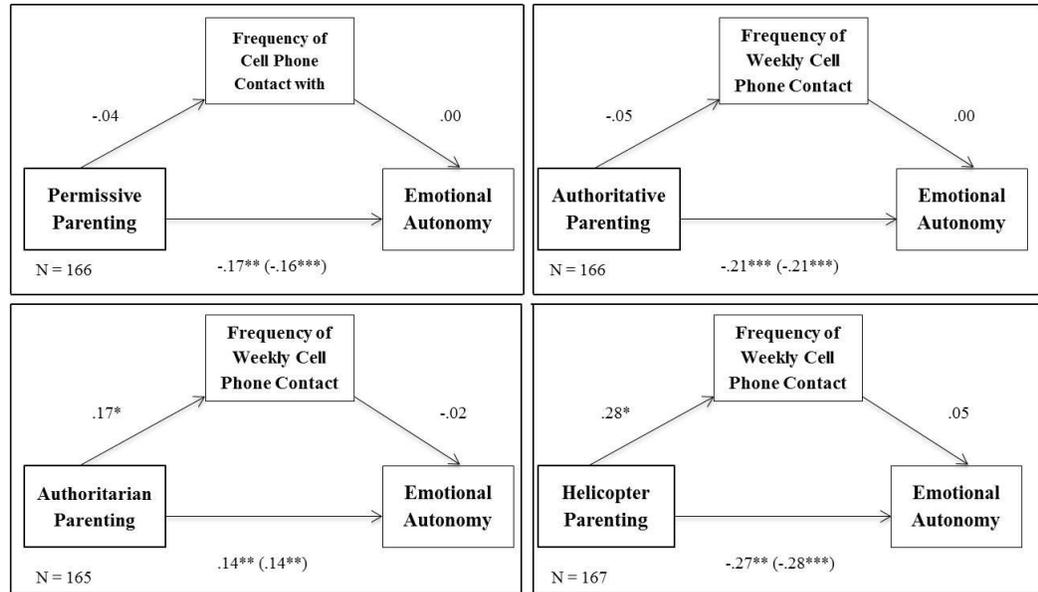


Figure 10. Primary parent cell phone contact does not mediate the relationship between parenting style and emotional autonomy

Note: \*\* $p < .01$ , \*\*\* $p < .001$

*Secondary parent.* As previously reported from Research Question 2a, it was found that secondary parents' levels of permissive, authoritative, and authoritarian parenting styles did not significantly predict total cell phone contacts with the primary parent, but helicopter parenting was significantly positively associated with the weekly number of parental cell phone contacts. There were some significant results for the direct paths between frequency of cell phone contact with the secondary parent and students' emotional autonomy. Greater frequency of weekly cell phone contact with the secondary parent significantly predicted decreased emotional autonomy in

both the permissive and authoritarian models (but not the authoritative or helicopter models). See Figure 11 below.

Results from the separate models indicated that, for secondary parents, higher levels of authoritative [ $B = -.16, t(148) = -2.61, p = .01$ ], and helicopter parenting [ $B = -.23, t(148) = -2.47, p = .01$ ], were related to decreased emotional autonomy. There was not a significant relationship between permissive parenting style and emotional autonomy, or between authoritarian parenting style and emotional autonomy for secondary parents.

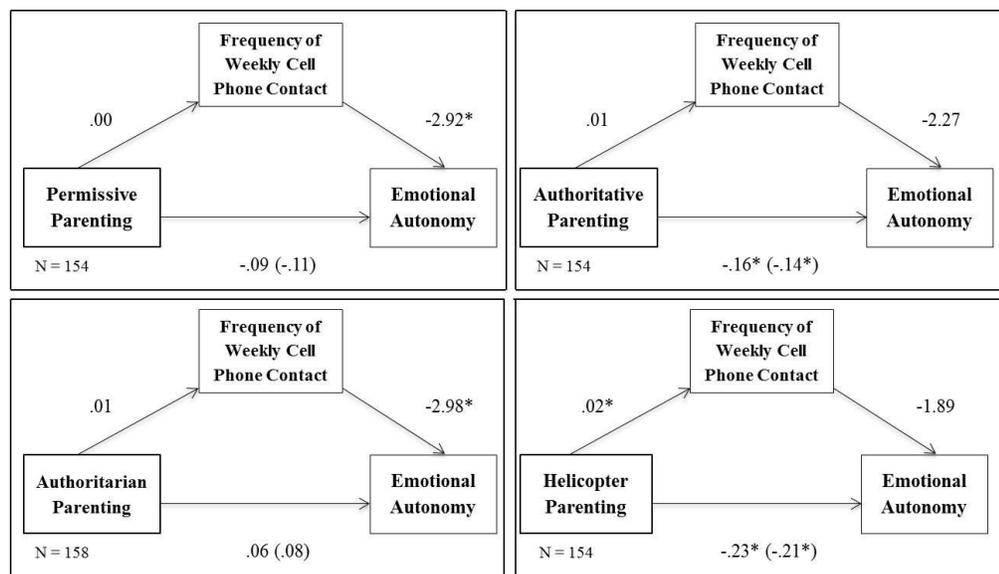


Figure 11. Secondary parent cell phone contact does not mediate the relationship between parenting style and emotional autonomy.

Note: \* $p < .05$

*Cell phone contact with parents as a moderator of the relationship between parenting style and college students' emotional autonomy.* Moderation analyses were employed to investigate whether the frequency of cell phone contact with parents moderated the relationship between parenting style and emotional autonomy. Interaction terms were computed by multiplying the mean-centered scores for frequency of weekly cell phone contact with parent by each parenting style variable (permissive, authoritative, authoritarian, and helicopter) as recommended by Aiken and West (1991). This was done for each parent, resulting in eight interaction terms that were used to test the moderation hypotheses in separate regressions. For each model, covariates were included in the first step as follows: gender, Asian American, African American, year in school, socioeconomic status, total cell phone use, and parental closeness. All continuous predictor variables in the analyses were mean-centered. The main effect for parenting style was entered in Step 2, the main effect for cell phone contacts was entered in Step 3, and the interaction term was entered in the final step. Tables 24 and 25 display the summary statistics and beta coefficients for each of the models.

Table 24. Summary of hierarchical regression analyses examining the moderating role of cell phone contact with parents on the relationship between parenting style and emotional autonomy.

Dependent Variable: Emotional Autonomy					
Final Predictor	Step 1 $\Delta R^2$	Step 2 $\Delta R^2$	Step 3 $\Delta R^2$	Step 4 $\Delta R^2$	R <sup>2</sup> Total
<b>P1 Parenting Style x Cell Contact (CC)</b>					
Permissive xCC	.25***	.04**	.00	.00	.29
AuthoritativexCC	.24***	.06**	.00	.02*	.33
Authoritarian xCC	.24***	.04**	.01	.02*	.31
Helicopter xCC	.23***	.05**	.00	.01	.29
<b>P2 Parenting Style x Cell Contact (CC)</b>					
Permissive xCC	.24***	.01	.04*	.00	.29
AuthoritativexCC	.24***	.04*	.03*	.01	.31
Authoritarian xCC	.24***	.01	.04*	.00	.29
Helicopter xCC	.24***	.04*	.02	.00	.30

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Variables were entered in the following order: Step 1: Gender, African American, Asian American, year in school, total cell phone use, and parental closeness. Step 2: primary parent parenting style, Step 3: cell phone contact with primary parent, Step 4: parenting style x cell phone contact.

Table 25. Summary of hierarchical regression analyses for primary parents examining the moderating role of cell phone contact with parents on the relationship between authoritative parenting style and emotional autonomy (beta coefficients)

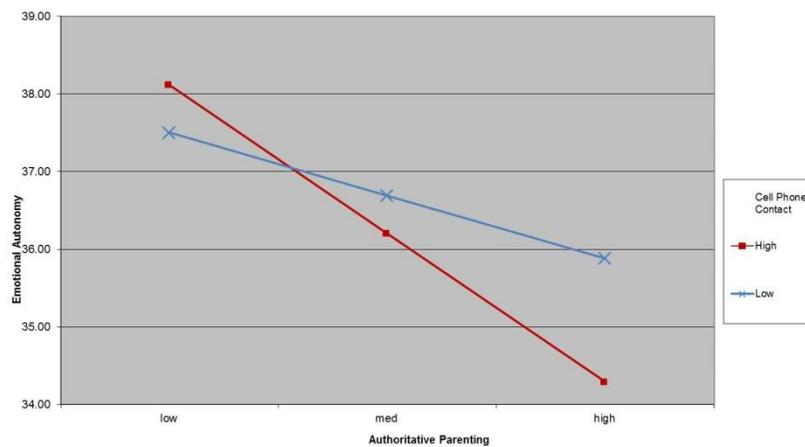
Parent 1 Predictor	Dependent Variable: Emotional Autonomy		
	<i>B</i>	<i>SE</i>	$\beta$
Gender	-1.15	.72	-1.61
Asian American	-.43	.82	-.53
African American	-1.12	1.26	-.89
Freshman	-.54	.70	-.71
Total cell use	-.12	.07	-1.04
Parental closeness	-2.74***	.57	-4.81***
Authoritative (ATV) Parenting	-.20**	.06	-3.85**
Cell phone contact with Parent 1	-.03	.05	-.61
ATV Parenting x Cell phone contact	-.01**	.01	-1.93**

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Variables were entered in the following order: Step 1: Gender, African American, Asian American, year in school, total cell phone use, and parental closeness. Step 2: primary parent parenting style, Step 3: cell phone contact with primary parent, Step 4: parenting style x cell phone contact. Continuous predictors were mean-centered.

*Primary parent.* In the permissive parenting and helicopter primary parenting models, adding the interaction term in the final step of the regression resulted in a nonsignificant  $R^2$  change, as can be seen in Table 24. However, the addition of the interaction term in the final step yielded significant results in the authoritative [ $\Delta R^2 = .02$ ;  $\Delta F(1, 159) = 3.73, p = .04$ ] and authoritarian models [ $\Delta R^2 = .02$ ;  $\Delta F(1, 160) = 4.89, p = .03$ ].

The interaction between primary parents' levels of authoritative parenting and the frequency of weekly cell phone contacts was negatively related to students' emotional autonomy ( $b = -.01, t(165) = 2.09, p = .04$ ; see Table 25). In order to examine the nature of this interaction,

regression equations were calculated for high and low levels of cell phone contact using the methodology described by Holmbeck (2002) and the ModGraph-I program (Jose, 2008). At high levels of authoritative parenting, more frequent cell phone contact with the primary parent was associated with lower levels of emotional autonomy, as shown in Figure 12 below. Post-hoc probing of the interaction revealed a significant slope for high [ $t(165) = -4.44, p < .001$ ], but not low [ $t(165) = -1.60, p = .11$ ] cell phone contact.



*Figure 12.* Cell phone contact as a moderator between primary parents' authoritative parenting and students' emotional autonomy

The interaction between primary parents' levels of authoritarian parenting and the frequency of weekly cell phone contacts significantly predicted students' emotional autonomy ( $b = .01, t(160) = 2.21, p = .03$ ; see Table 23 below). In order to examine the nature of this interaction, regression equations were calculated for high and low levels of cell phone contact using the methodology described by Holmbeck (2002) and the ModGraph-I program (Jose,

2008). Specifically, at low levels of authoritarian parenting, more frequent cell phone contact with the primary parent was associated with higher levels of emotional autonomy, as shown in Figure 13 below. Post-hoc probing of the interaction revealed a significant slope for high [ $t(166) = -4.04, p < .001$ ], but not low [ $t(166) = 1.34, p = .18$ ] cell phone contact.

*Table 26.* Summary of hierarchical regression analyses examining the moderating role of cell phone contact with primary parents on the relationship between authoritarian parenting style and emotional autonomy (beta coefficients)

Parent 1 Predictor	Dependent Variable: Emotional Autonomy		
	<i>B</i>	<i>SE</i>	$\beta$
Gender	-.60	.69	-.82
Asian American	-.44	.73	-.53
African American	-2.48	.82	-1.79
Freshman	-.36	1.38	-.51
Total cell use	-.13	.07	-1.97
Parental closeness	3.02***	.55	-5.46***
Authoritarian (ATN) Parenting	.17**	.05	3.62***
Cell phone contact with Parent 1	-.09	.05	-1.71
ATN Parenting x Cell phone contact	.01*	.01	.16*

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Variables were entered in the following order: parental closeness. Step 2: primary parent parenting style, Step 3: cell phone contact with primary parent, Step 4: parenting style x cell phone contact. Continuous predictors were mean-centered.

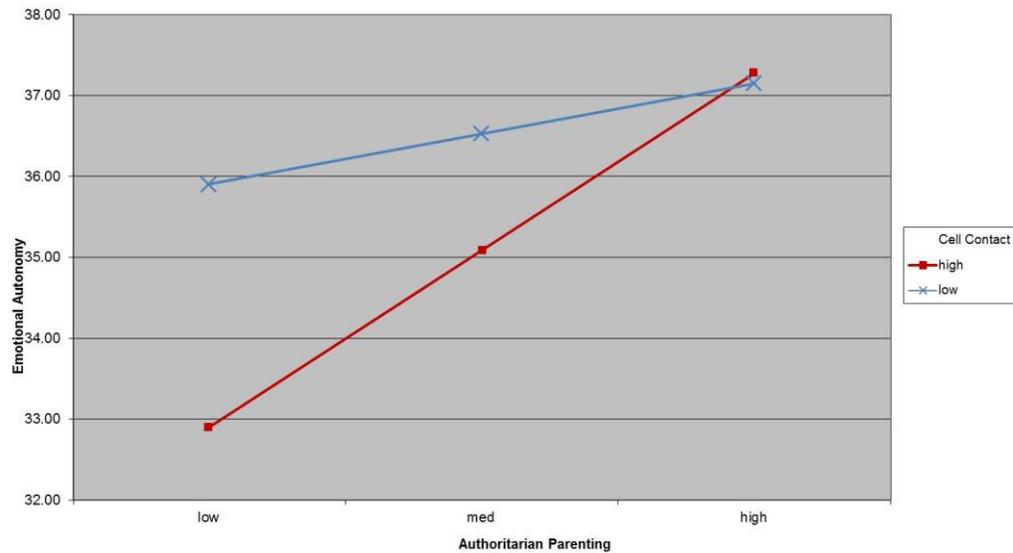


Figure 13. The moderating role of cell contact with primary parent between authoritarian parenting style and emotional autonomy.

To examine whether the moderation results reported for primary parental cell phone contact were predicated on the nature of that contact, t-tests on the differences in the communicative content of cell phone contact were run between those parents categorized as authoritative types and those categorized as authoritarian. Results indicated significant differences in the frequency of discussing certain types of content. Students who rated their parents as more authoritative were more likely than those with authoritarian parents to endorse greater frequencies of the following supportive behaviors when talking on the phone with their parent: parent provides emotional support [ $t(169) = 2.58, p = .01$ ]; parent cheers you up [ $t(167) = 2.47, p = .01$ ]; parent tells you he/she loves you [ $t(167) = 2.27, p = .03$ ]; parent helps you solve a

problem [ $t(166) = 2.17, p = .03$ ]; and parent listens to you vent or complain [ $t(167) = 2.58, p = .01$ ]. In contrast, those whose primary parents were categorized as authoritarian were more likely than those with authoritative parents to endorse less supportive behaviors via cell phone: parent exerts pressure for you to perform well academically [ $t(169) = -3.80, p < .001$ ]; parent exerts pressure for you to choose a certain career path [ $t(168) = -2.67, p = .008$ ]; and parent annoys you [ $t(168) = -2.63, p = .01$ ].

*Secondary parent.* Results of the analyses for secondary parents indicated that in each parenting style model, the addition of an interaction term in the fourth step did not result in a significant  $\Delta R^2$  value. That is, the frequency of cell phone contact with the secondary parent did not moderate the relationship between parenting style and students' emotional autonomy for any of the parenting style models (see Table 24 above).

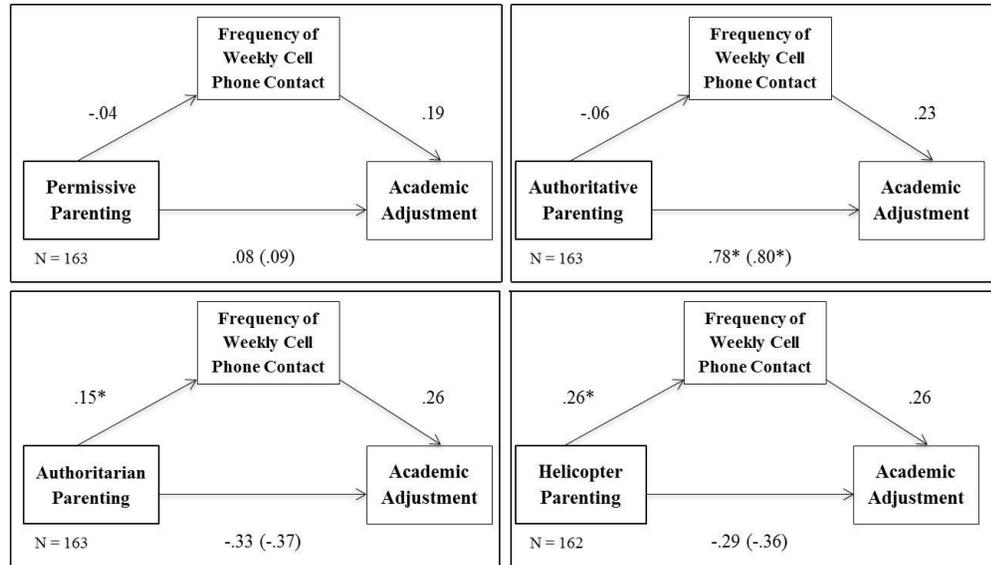
**RQ4a: The role of cell phone contact in the relationships between parenting styles and academic adjustment to college.** Additional analyses explored frequency of parental cell phone contact as a mediator and a moderator of adjustment to college, in both the academic and social realms. Results are presented below.

*Cell phone contact with parents mediating the relationship between parenting style and college students' academic adjustment to college.* Nonparametric bootstrapping analyses (see Preacher & Hayes, 2004; Preacher, Rucker, & Hayes, 2007) were also used to test the mediational model of cell phone contact frequency as a mediator of the relationship between parenting style and academic adjustment. Separate models were fitted for the four different

parenting styles (permissive, authoritative, authoritarian, and helicopter), for each parent, predicting to academic adjustment as the dependent variable.

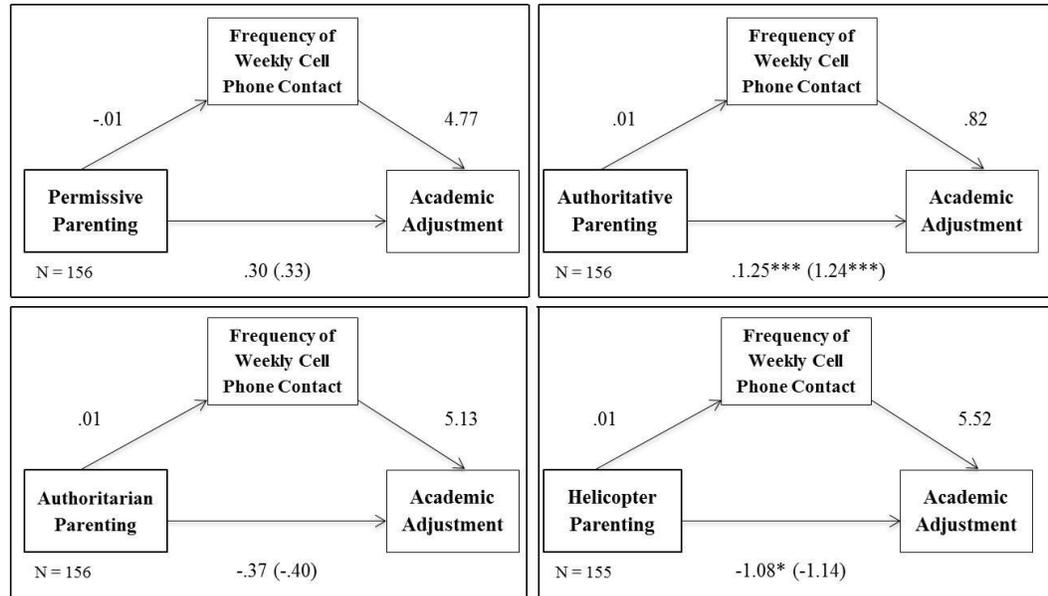
There were no significant indirect effects found for any of the parenting styles for either parent, indicating that the amount of total weekly cell phone contact with parents does not mediate the relationship between parenting style and college students' academic adjustment to college. In fact, cell phone contact frequency was not significantly related to academic adjustment in college for either parent.

However, some significant direct effects did emerge from the analyses. Higher levels of academic adjustment were predicted by higher levels of authoritative parenting from both the primary parents [ $B = .78, t(153) = 2.41, p = .02$ ] and secondary parents [ $B = 1.25, t(153) = 3.47, p < .01$ ]. In addition, secondary parents' helicopter parenting was negatively associated with academic adjustment [ $B = -1.14, t(153) = -2.05, p = .04$ ]. All other direct effects in this model were nonsignificant, as can be seen in Figures 14 and 15 below.



Note. \* $p < .05$

Figure 14. Primary parent cell phone contact does not mediate the relationship between primary parent parenting style and college academic adjustment.



Note. \* $p < .05$ , \*\*\* $p < .001$

Figure 15. Secondary parent cell phone contact does not mediate the relationship between secondary parent parenting style and academic adjustment.

*Cell phone contact with parents moderating the relationship between parenting style and college students' academic adjustment to college.*

To investigate whether the frequency of cell phone contact with parents moderated the relationship between parenting style and academic adjustment in college, interaction terms were used and predictor variables were entered in the same manner as described above. This time, the dependent variable was college students' academic adjustment. Results indicated that adding the interaction term in the final step of the regression resulted in a nonsignificant  $R^2$  change for all

four parenting styles (permissive, authoritative, authoritarian, and helicopter parenting) for both parents. See Appendix Table B8 for the nonsignificant results.

**RQ4b: The role of cell phone contact in the relationships between parenting styles and social adjustment to college.** The final set of analyses explored frequency of parental cell phone contact as a mediator and a moderator of social adjustment to college, using the same analyses as described above for academic adjustment.

*Cell phone contact with parents mediating the relationship between parenting style and college students' social adjustment to college.* Nonparametric bootstrapping analyses (see Preacher & Hayes, 2004; Preacher, Rucker, & Hayes, 2007) were again used to test the mediational model of cell phone contact frequency as a mediator, this time between parenting style and college social adjustment. Separate models were fitted for the four different parenting styles (permissive, authoritative, authoritarian, and helicopter), for each parent, predicting to social adjustment to college.

With the exception of the previously discussed relationships between primary parents' levels of authoritarian parenting and helicopter parenting predicting frequency of weekly cell phone contacts, there were no significant effects found for any of the relationships in the models for either parent, indicating that the amount of total weekly cell phone contact with parents does not mediate the relationship between parenting style and college students' academic adjustment to college. In fact, cell phone contact was not significantly related to social adjustment in college

for either parent, nor was parenting style significantly related to social adjustment in any model, as can be seen in Figures B1 and B2 in the Appendix.

*Cell phone contact with parents moderating the relationship between parenting style and college students' social adjustment to college.* To investigate whether the frequency of cell phone contact with parents moderated the relationship between parenting style and social adjustment in college, interaction terms were used and predictor variables were entered in the same manner as described above. This time, the dependent variable was college students' social adjustment. Again, results indicated that adding the interaction term in the final step of the regression resulted in a nonsignificant  $R^2$  change for all four parenting styles for both primary and secondary parents. See Table B9 in the Appendix for  $\Delta R^2$  values for each step for each model.

## Discussion

### **Modes and frequency of communication between college students and their parents**

Emerging adult residential college students in this study communicated with their parents frequently and through a variety of modes, including cell phone calls, text messages, emails, video chats, and Facebook, as well as occasional cards, care packages, and face-to-face visits. In a given week, when combining contact with both parents, students reported an average of 10.92 cell phone calls, 49.88 text messages, and 6.04 email exchanges, with contact initiated by students and parents at roughly the same rates. The average number of total weekly parental contacts when phone calls, texts, and emails were combined was 52.92, or 7.56 contacts per day, with females contacting their parents more frequently than males, in general. During weeks when video chats and the exchange of cards and letters occur, total contact is even higher (but they were not included in the total because they typically occur less frequently than once a week). Although there was great variability in the frequency with which students contacted their parents overall ( $SD = 47.92$ ) only three students in this sample reported that they had no contact with their parents at all during the previous week, and four students reported that they had only one contact with their parents during that period. This is an astonishing increase in connectivity to parents when considering that most parents of today's college students recall contacting their own parents once a week or less (Hofer, et al., 2009) during the "dark ages" of shared landlines in dormitories and letters through the mail.

The communication frequency reported by college students in this study is also remarkable when compared to Hofer's (2008, 2009) study, which found that college students contacted their parents an average total of 13.72 times per week, including contacts with both parents and all modes of communication combined. Five years later, data from the current study suggest that the total rate of contact with parents has more than quadrupled. This increase is staggering, and may be explained in part by the growth of popularity in texting (Smith, 2011b) and in the greater availability of unlimited texting plans (Associated Press, August 22, 2012). Data collected by the Pew Internet and American Life project indicate that in 2008 only 58% of teenagers had ever sent a text message, and 38% reported texting at least once a day (Lenhart, 2009). A more recent Pew report described a leveling-off of the growth of texting among Americans in 2011 after a period of sharp increase, at which time 80% of middle adults used texting (Smith, 2011b). The current study supports those findings, as almost all emerging adults in the current study used texting to communicate frequently, but only about 85% of their parents used it at all. Closeness to parents was related to more frequent texting, as was high rates of texting overall. However, results did not indicate the significance of texting in relation to any other variables of interest in the current study. Students said that they favor texting when they have something quick to tell their parents, when they just want to check in or share information, or when it is not a good time to call.

Texting alone does not explain the sharp increase in total communication between college students and their parents. The average number of total phone calls per week in this study (10.92)

was not far from Hofer's total of 13.72 contacts overall (2008, 2009, 2010), and when emails and phone calls for the current study were added together, the total (17.12) exceeds Hofer's by nearly 3.5 contacts. This suggests an increase in communication unrelated to text messaging. Indeed, phone calls were the preferred mode of communication with both parents for most students in this sample, and this was likely for a variety of reasons including parents' higher comfort levels with phone communication and parents' ability to talk on the phone from either a landline or a cell phone. Students also reported that parents used the phone to engage in emotionally supportive, academically regulatory, and parental monitoring behaviors more often than with other modes. While texting and emailing are largely relegated to check-ins, itineraries, and other transactional communications, the cell phone call and the less frequent video chat have distinct advantages for more intimate communication, which students alluded to in their open-ended responses.

### **College students' connectedness to parents via social media**

In contrast to the phone, which has been connecting college students to parents for generations, social media is the newest way for them to stay in touch. Results from the current study indicate that it is not uncommon for emerging adults to be friends with their parents on Facebook. In fact, half of the college students surveyed had at least one parent with a Facebook profile, and 77% of those students were connected with their parent on Facebook. Media and blogger speculation about the parent-child Facebook friendship in emerging adulthood generally proclaims that students recoil at the idea of being friends with their parents on Facebook (e.g., [www.myparentsjoinedfacebook.com](http://www.myparentsjoinedfacebook.com)). However, the current study found that the vast majority of

students felt either neutral or positive about connecting to a parent on Facebook, and parental closeness significantly predicted higher satisfaction with the parent-child Facebook friendship. These findings are in line with a previous experimental study with young adults who were randomly assigned to groups in which they either “friended” their parents on Facebook or did not. The researchers found that being Facebook friends with a parent did not result in perceptions of greater privacy invasions, and was actually associated with decreased conflict and enhanced closeness when compared to a group who did not friend their parents (Kanter, Afifi, & Robbins, 2012).

Facebook also seems like a perfect venue for parents to keep tabs on their college student’s behavior, but students in this sample did not rate it highly as a means through which parents learn about who their friends are, where they go at night, how much money they spend, or how much they drink. However, college students don’t know exactly what their parents garner from looking at their Facebook profiles, and it may be that parents use Facebook to get that information without their children explicitly realizing it. More research from the parents’ perspective is necessary in this realm. There is evidence that parents use Facebook to monitor their younger adolescents, but even then the research has mostly focused on parents keeping track of their children’s safety and watching for clues of bullying behaviors, rather than its usefulness as a tool for general parental knowledge (Madden, Cortesi, Gasser, Lenhart, & Duggan, 2012). This study is among the first to investigate the parent-child Facebook relationship in emerging adulthood, and it is an area ripe for further research.

Twitter and Instagram use were not as popular for connecting with parents as Facebook. Fewer than ten students were connected with either parent on Twitter, and fewer than five were connected on Instagram. There is speculation that younger adolescents prefer the greater privacy of Twitter to Facebook (they can have multiple accounts and use handles instead of their real names on the former), and they use it as a way to find a place to connect without their parents looking over their shoulders (Wiederhold, 2012). A recent *Time Magazine* article interviewed teens for a story about Facebook “losing its cool” (Luckerson, 2013). One teen offered, ““Facebook right now is boring because you see everyone at school, but after you get to college you want to know what everyone’s up to and what they’re doing...we’ll start using it more once people we know go to different parts of life”. Perhaps among emerging adults this reasoning extends to seeing what parents are “up to” as well, or at least to the notion that their parents will want to know what *they* are up to. In fact, many students in the current study mentioned that as one of the benefits of Facebook. When asked open-ended questions regarding what they liked and disliked about different social media, none of the students in this sample mentioned that they disliked Facebook because of their parents’ presence there, or that they liked Twitter because their parents did not use it. They were not asked explicitly about whether they prefer one over the other based on their parents’ presence, but it did not appear to be a primary or particularly salient concern. However, we should also recall that students reported posting content more often on Twitter and Instagram far more than Facebook, so this may point to a penchant for posting where their parents won’t see it. Or, it may simply be part of the currently perceived norms for

Facebook use versus Twitter and Instagram. Regardless of their reasons, college students in general currently phone, text, email, video chat, and connect through Facebook with their parents quite frequently, but rarely via Twitter and Instagram.

### **Content of communication between college students and their parents**

Students most often discussed, asked for advice about, and received unsolicited advice about their current coursework, future career plans, finances, and health. It was less common for students (especially males) to report discussing details of interpersonal problems with peers, and very uncommon to discuss what might be considered sensitive topics such as alcohol use and sexual health with parents. This is consistent with developmental literature demonstrating that older adolescents tend to turn to their parents rather than their peers for help in making future-oriented decisions, whereas they perceive friends as more important for current problems (Wilks, 1986). In addition, health and finances are topics that typically fall under a parent's domain, particularly when parents provide financial support and health insurance. Still, parental influence continues to play a role in drinking behavior (Wood, Read, Mitchell, & Brand, 2004; LaBrie & Sessoms, 2012) and sexual health behavior (Lau, Quadrel, & Hartman, 1990) after high school, and it is important for parents to know not to shy away from these conversations. The current study did not examine risk behavior among emerging adults in relation to their communication with parents, but it is an interesting and important future direction.

Anecdotes of parents who are grossly over-involved in their children's college lives describe students whose parents provide wake-up calls, intervene by contacting professors about

grades, and run their schedules using copies of syllabi (e.g., Hofer & Moore, 2010; Reuters, February 13, 2013). Data from the current study suggest that these extreme behaviors are not the norm, although they do occur. The mean score on any parental over-involvement behavior in the current study did not exceed 2 (“rarely”), and less than 10% of students reported any instance of parent intervention with a professor or resident advisor, although underreporting for these questions is certainly possible. In general, primary parents indulged in more over-involved parenting behaviors, and did so more with females than males. One of the most frequently endorsed over-involvement behaviors was sending home papers to be edited by parents. This is an interesting issue because, as Hofer and Moore point out (2010), it is unclear at many institutions whether this violates the honor code, though it is likely to benefit students with college-educated parents. While this act did not appear to be particularly widespread in this sample, university administrators should consider addressing the issue in order to make expectations clear to students and parents.

These statistics paint a picture of college students who are hyper-connected to their parents. Given the previously discussed norms for low parental contact among previous generations of college students and the notion that college is a time for increased independence (Chickering, 1969; Chickering & Reisser, 1993), one might speculate that students yearn to be free from their parents at this stage of life. However, that does not appear to be the case. Rather, students seem to be quite comfortable with their current levels of contact. Overall, they reported high satisfaction with both the frequency and the quality of communication with their parents.

Only 3% of students reported that they desired less contact with their primary parents, and only slightly more (6%) wanted less contact with secondary parents. The rest of the students were either satisfied or wanted more contact, which supports findings from Hofer's previous studies (2008, 2009) and suggests that students' desire for contact with parents is at least partly driving the phenomenon of increased parental contact during the college years.

### **Parenting style and frequency of communication with parents in emerging adulthood**

Results of the current study were in contrast to my hypotheses that emerging adults would seek more contact with their warm and responsive authoritative parents, and that they would avoid frequent contact with more controlling authoritarian parents. Instead, the opposite was true: parents' higher scores on authoritarian parenting and helicopter parenting predicted slightly more contact with parents via cell phone. Both authoritarian parenting (Baumrind, 1978), and helicopter parenting (Padilla-Walker & Nelson, 2012) are characterized by high levels of parental control, which may explain the increased contact as parents attempt to extend their control beyond the high school years and onto the college campus.

Although authoritative parenting did not predict more frequent contact as hypothesized, parental closeness emerged as a significant predictor of frequency of cell phone and total communication. It makes intuitive sense that the closer one feels to his or her parent, the more frequently they will be in touch, as closeness to parents has been found to relate to greater disclosure in adolescence (Vieno, Nation, Pastore, & Santinello, 2009). In addition, students who

talked on their cell phones more frequently in general tended to talk to their parents more often, and the same went for texting as well.

### **Parenting style, communication, and emotional autonomy in emerging adulthood**

Some of the most surprising findings in the current study were related to parenting style and emotional autonomy. Research with adolescents has demonstrated a significant, positive relationship between authoritative parenting style and emotional autonomy (e.g., Baumrind, 1991; Steinberg & Silk, 2002), and it was expected that this would be the case with the emerging adults in this sample. I originally hypothesized that college students with authoritarian and helicopter parents would be the least autonomous, because both parenting styles are characterized by a lack of autonomy-granting (Baumrind, 1991; Padilla-Walker & Nelson, 2012). However, results of the current study indicated that the parenting styles involving high levels of warmth - authoritative, permissive, and helicopter parenting – all significantly predicted *lower* emotional autonomy among college students. At the same time, authoritarian parenting was related to greater autonomy.

Bootstrapping analyses demonstrated that frequency of cell phone contact with parents did not account for these unexpected relationships between parenting style and autonomy. However, analyses investigating frequency of cell phone contact with parents as a moderator did shed some light on these associations. At low levels of authoritative parenting, students reported greater autonomy regardless of cell phone contact. But when parents were more authoritative, more frequent cell phone contact predicted decreased autonomy. On the other side of the coin,

high levels of authoritarian parenting resulted in higher levels of autonomy no matter how often students talked on the phone with parents. With less authoritarian parenting, though, high contact predicted decreased autonomy.

When considering these findings, recall that emotional autonomy in this study was measured with the items from Steinberg and Silverberg's (1986) Emotional Autonomy Scale, but items were scored according to Beyers, et al.'s (2005) *separation scale* of emotional autonomy. The scale measures a separation from parents which involves an understanding of the self as distinct from the parent, as well as a distancing from childhood representations of the parent-child relationship, and a move toward a representation of self and parents as separate individuals (Beyers, et al., 2005). Separation is not necessarily accompanied by negative feelings towards parents (Beyers, et al., 2005).

Perhaps emerging adults with more authoritarian parents find it easier or more appealing to seize the freedom of college life to distance or separate themselves from more controlling parents, whether they communicate with them frequently or not. Post-hoc analyses suggested that more authoritarian parents tended to nag about academic or future issues, which may push their children towards separation, perhaps more of a "reactive autonomy" as opposed to "intrinsic autonomy". On the other hand, students who communicated more with authoritative parents found many opportunities to feel very connected to them, comforted by them, and dependent on them through parents' highly emotionally supportive behaviors, which may decrease emerging adults' desire for separation, in turn resulting in decreased emotional autonomy. These findings

also support the distinction between parenting styles and parenting practices put forth by Darling and Steinberg (1993). That is, frequent phone conversations and the type of communication that takes place on the phone (e.g., emotionally supportive vs. regulatory behaviors) differentially affect the outcome of autonomy development within the context of the different parenting styles. While talking on the phone a lot did not seem to make a difference in autonomy development for students with more authoritarian parents, frequent phone communication appeared to inhibit autonomy development among those whose parents were perceived as more authoritative. Still, this may not be such a bad thing for these students, at least not in the short term. Lamborn and Groh (2009) also used Beyers et al's. (2005) separation scale as part of a study of different facets of autonomy in emerging adulthood. They found that low separation was related to positive outcomes, noting:

“It appears that some emerging adults continue to live a cushioned life in which low self-reliance combined with low separation from parents is associated with feelings of self-worth and strong performance in college. This seems to be an immature strategy that is, nevertheless associated with positive indicators of adjustment. Further research may reveal whether or not this is a temporary advantage that becomes problematic with later development...It is a period of life that is often supported by continued dependence on parents...” (Lamborn & Groh, 2009, 399).

Although the current study did not find a significant relationship between separation and adjustment to college, when Lamborn & Groh's (2009) results are taken together with the current study's findings of frequency of contact, college students seem to be quite comfortable with constant connectivity and low separation from parents. This suggests that in some ways college students find it adaptive to continue to rely on their parents. Furthermore, news accounts have

indicated that this continues after college and into the workplace (e.g., Ludden, 2012), but there has not been empirical research to support this. Although there are stories of extreme over-parenting beyond college (e.g., parents accompanying their adult children on employment interviews), it is important to consider how combinations of parents' increased involvement and increased connectivity via technological communication may shape the emerging adulthood experience in college and beyond. The current study did not investigate self-reliance, but further research examining self-reliance in relation to parenting style and parental contact may shape our understanding of the development of emotional autonomy in emerging adulthood. Additional research is also necessary to continue examining the measurement of emotional autonomy in emerging adulthood.

### **Parenting style, frequency of communication, and adjustment to college**

Frequency of cell phone contact did not emerge as a mediator or moderator of the relationship between parenting style and either academic or social adjustment to college. In fact, the only significant relationships to emerge from these analyses (other than previously discussed associations between parenting style and communication frequency) were between parenting style and academic adjustment. Higher levels of authoritative parenting style significantly predicted academic adjustment to college, with secondary parents as an even stronger predictor than primary parents. This supports previous research demonstrating that adolescents with authoritative parents tend to do better in school (e.g., Melby & Conger, 1996; Steinberg, 1996), as well as more recent research linking higher academic performance in college with authoritative

parenting (Hickman, 2000; Wintre & Yaffe, 2000). In addition, for secondary parents, higher levels of helicopter parenting were related to lower academic adjustment in the current study, which supports findings by Padilla-Walker and Nelson (2012) that helicopter parenting was negatively associated with emerging adults' academic engagement. Results for primary parents' helicopter parenting were in the same direction but were not significant.

For a generation of parents who have been told that parental involvement significantly predicts academic success (e.g. Eccles & Harold, 1993), it may be difficult for parents to realize that they must learn to pull back once their child is in college. Particularly at institutions with reputations for highly selective admittance, it is likely that many parents spent a significant amount of time and resources supporting their children's development and achievement throughout childhood and adolescence with an eye towards landing a spot at a highly-ranked college or university, and they often foot most of the bill. These parents (and their college-student children) may be in need of some guidance regarding setting boundaries that will promote academic and social success at college. However, the current study did not provide evidence to indicate that frequent parental contact affects academic or social adjustment in either a positive or negative way, regardless of parenting style.

### **Demographic variables**

Females in this sample did not talk on the phone or text more frequently in general than males overall, which is in contrast to previous findings that adolescent girls talk on the phone (Lenhart, Ling, Campbell, & Purcell, 2010) and text (Underwood, Rosen, More, Ehrenreich, &

Gentsch, 2011) more often than boys. Perhaps male emerging adults use cell phones and text messaging more in this later stage of life than they did as adolescents, or it may be that texting has become more prevalent among males since the previous data were collected. Other gender differences in the current study were supported by previous literature. For example, females contacted their primary parents more frequently than males, which was also found in earlier studies among college students (Hofer, 2008; Small, 2011). Extant research also suggests that girls focus on emotional issues more than boys (Tradesh, et al., 2001), and that mother-daughter relationships are generally the closest of the parent-child dyads (Fischer, 1991), which would fit with the current findings.

Dornbusch (1989) pointed towards the importance of differentiating among mother-daughter, mother-son, father-daughter, and father-son relationships, which this study did not do. In an effort to account for non-traditional families, the current study was conceptualized as neutral on parent gender. However, none of the students in the sample reported that they had same-sex parents, and most were from families in which both parents lived in the same home. Future analyses could investigate the specific role of mothers and fathers with daughters and sons to expand upon the current findings that females had greater parental contact. Female students also reported lower emotional autonomy, which is supported by previous literature that girls exhibit higher levels of separation anxiety and enmeshment (Beyers & Goosens, 1999; Lamborn & Steinberg, 1993), and that boys are granted more autonomy than girls (Bumpus, et al., 2001).

This study failed to detect significant effects of Asian American ethnicity on communication frequency, emotional autonomy, or adjustment to college. This was somewhat surprising given research demonstrating that authoritative parenting is less common in Asian American families (Dornbusch, Ritter, Liederman, Roberts, & Fraleigh, 1987), and that Asian American families' attitudes of interdependence are related to their high rates of academic achievement (Tseng, 2004). In addition, Asian American parents tend to emphasize respect for parents over closeness and intimacy (Chao, 2001). It seems that such differences in family background might predict differences in parenting style, communication frequency, emotional autonomy, or adjustment, but none were found in the current study. However, it has been suggested that Baumrind's (1978; 1991) parenting styles may not capture the type of demandingness that is culturally typical among Asian Americans but may seem negative to European American researchers (Chao, 2001; Chao & Tseng, 2002). In that case, measurement may have been an issue, as well as sample size, for only 25% of the sample ( $n = 45$ ) was of Asian American descent.

There were even fewer African American students in the sample (10%,  $n = 18$ ) than Asian American students, so results pertaining to African American students must also be interpreted with caution. Still, a consistent finding in the current study was that African American students contacted their primary parents more frequently than European American students. This finding could be supported by previous research demonstrating the importance of family connectedness and parental support among African American students. For example,

parental support during the college transition is an important protective factor against anxiety among African American students, especially for those who value social relationships (Mounts, Valentiner, Anderson, & Boswell, 2006). A separate study of African American gifted adolescents demonstrated that family connectedness contributes to school belonging via self-concept (Mueller & Haines, 2012). Because African Americans often have fewer peers of similar ethnic background when they enter the college setting, it may be that increased parental contact is one way that these students cope with the transition to college life. More research with diverse samples is necessary to explore these possible cultural differences.

Year in school was not a significant predictor in the current study, as measured by comparing freshmen students to sophomores, juniors, and seniors. The lack of significant findings related to year in school may be due to low participation by upperclassmen, but results were consistent with Hofer's (2008) findings that communication patterns were similar between freshman and sophomore year. With upperclassman, however, it may be true that authoritative students become more intrinsically autonomous as they approach the transition from college to the next phase of their lives, while authoritarian students, on the other hand, might be hampered in their search for genuine autonomy by the reactive quality of autonomy that was evident in this study.

In addition, socioeconomic status was not a significant predictor in this study. While low SES may affect families' access to cell phone service, data plans, and wireless broadband service (Zickuhr & Smith, 2012), most of the students in the current sample do not come from

disadvantaged backgrounds. In a more diverse sample, it is possible that differences related to SES might emerge.

### **Limitations and Future Directions**

This study had some limitations that warrant comment. First, the participants were undergraduates at a selective mid-sized private institution, which limits the generalizability of the results to students at other types of colleges and universities. However, a previous study demonstrated that results regarding communication with parents were similar across a small private college and a large research university, which provides support that patterns may be consistent across institutions (Hofer, 2008; 2009). Furthermore, the sample size decreased for analyses that included secondary parents and any mode of communication besides the phone, as well as in instances of missing data when respondents skipped items on the survey. However, the sample size appears to have been adequate for the initial detection of trends, and it can be expanded upon in future research with larger samples to determine whether the failure to detect certain relationships was a result of inadequate power. An additional limitation is the possibility of shared method variance due to the self-report nature of the measures.

This study was an exploratory step to identify relationships between parenting styles, communication, autonomy, and adjustment. It was among the first to explore the social media relationships between emerging adults and their parents, as well as to study helicopter parenting in the developmental stage of emerging adulthood. Future studies will attempt to recruit a large sample of students and their parents from different types of colleges and universities, across

ethnicities and including more evenly balanced numbers of freshmen, sophomores, juniors, and seniors to detect changes that may take place throughout the college experience. Longitudinal studies that follow students and their parents through college and into the work force would provide rich information beyond the college experience. Future steps will also focus on a deeper investigation of the measurement and conceptualization of emotional autonomy. In addition, research exploring parental monitoring, risky behavior, perceived self-efficacy, and self-reliance could all provide a deeper understanding of the role that increased connectivity with parents plays in development during emerging adulthood.

### **Conclusions and Reflections: The role of technology in the lengthening path to adulthood**

One of the broad implications of the findings of the current study is that the technological transformations brought about by the digital age may be an important contributor to the contemporary lengthening of the developmental journey from adolescence to adulthood. As we attempt to situate these findings in an expanded context, we must keep in mind that major social changes have often altered the course for youth development over time (Brown & Larson, 2002). For example, the term “adolescence” emerged toward the end of the 19<sup>th</sup> century (Kett, 1977), when changes in child labor laws and requirements for compulsory schooling arose from the Industrial Revolution (Tyack, 1990). As a result, greater and more consistent school attendance for increased periods of time allowed youth to master emerging concepts and technologies that promoted academic success. This was in marked contrast to the previous adoption of adult roles within the family (e.g., lifelong work on family farms, businesses, or trades alongside their

parents), which were hallmarks of previous intergenerational relationships (Tyack, 1990). Suddenly, an upward mobility for youth depended more on the acquisition of new skills than on skills learned within the family.

Some social changes over time can result in constrained opportunities for youth development, as in the cases of young men drafted for the World Wars and young women expected to work in factories to aid war efforts. Other social changes over time broaden opportunities for growth. For example, youth participation in war, which removed young people from their families, led to changes in sexual norms (Allen, 1964), and the status of women (Johnson, 1992), which brought about the rise of “youth culture” in the 1920s (Allen, 1964; Johnson, 1992). The 1930s through the 1950s saw a distinctive pattern of life emerge around the high school, in which some adolescents were highly involved in the social system of adolescents and others pursued a style of life in anticipation of adult responsibilities (Coleman, 1973). The cultural revolutions of the 1960s and 1970s served to extend adolescence by inducing young people to engage in a protracted search for their own adult identities. This often involved putting off the assumption of adult roles such as marriage, family, and work until one found a purpose (Coleman, 1973), as well as using parents and other adults as counterexamples of their future selves. What followed was the rising aspiration to attain financial success in the 1980s and globalization in the 1990s, giving rise to the phenomena of Generation-X in which more (and more varied) possibilities were opened up for individuals born between 1964 and 1978 (Strenger, 2004). Perhaps counterintuitively, this world of opportunity was, itself, constraining, as one

researcher notes that it was accompanied by “a feeling that there is very little wisdom of earlier generations that [Gen-X youth] can use to navigate their way in a world that simply outpaces that wisdom. The complexity of their path toward an established identity is greater than it was in more strictly structured societies” (Strenger, 2004, 502). In a paradoxical way, the opportunities of the time resulted in constraints in the development of identity, an effect that in some ways defined this generation.

The more conventional, success-driven individuals whose coming-of-age took place in the 1980s and early 1990s are today becoming allies with their own children in building a future direction toward a successful adulthood (Henig, 2010), which includes the adoption of technology. For some of these parents, the role of ally has taken on extreme forms, such as spending thousands of dollars on “admissions consultants” in hopes of getting children into the most exclusive pre-schools, and eventually the most elite universities (e.g., Palmeri, 2012). Even absent those extremes, most, if not all parents seek to shepherd their children on paths to success and opportunity, typically via a college education, if possible.

The transformation to the Digital Age in the 1990s and beyond provided a means for the continuous connectivity between these parents and their “digital native” (Bennett, Maton, and Kervin, 2008) children. When separation occurred, for short periods of time in adolescence, and more extended periods as in the case of the transition to college, it need not be long before parent and child connected again. We are far removed from a time when college students had to wait for an available dorm phone in the evening to reach home and their parents. Instead, in wild

contrast, the results of the current study demonstrate that connectivity is near-constant between many college students and their parents. Decades ago, autonomy development and the establishment of independence from parents were identified as crucial tasks of adolescence (Havighurst, 1948; Erikson, 1950), and Chickering identified the development of autonomy through separation from parents as the primary developmental task of the college years later (1969; Chickering & Reisser, 1993). It appears that the information age and the ease with which it allows connective continuation have contributed to an emerging trend: the delay of and decline in autonomy-seeking, seen here in emerging adults whose parents are high on warmth and support. In contrast, for those with more demanding parents and potentially higher-conflict relationships, the need for autonomy may have been intensified and abetted by the existence of an expanding network of peer connections, both live and virtual. Communication with more controlling parents in this case is not broken – indeed, in the current study students communicated with authoritarian and helicopter parents even more frequently than those who appeared to be delaying their autonomy development by communicating often with authoritative parents. The results described above indicate that communications with more controlling parents were best characterized as "regulatory" as opposed to the collaborative, life-seeking exchanges of the emerging adults with more authoritative parents.

In the digital age, it is much easier to "take your past with you" (and more difficult to escape it) during life's transitions, such as moving away to college. It is now basically effortless to keep up with family and high school friends with instantaneous communication. College

students in this sample had an average of over 800 Facebook friends, allowing them to revisit hundreds of past relationships at any moment. Perhaps the retention of previous networks is one factor extending the path to adulthood.

### **Beyond Individual and Relational Dynamics**

Finally, it is interesting to note that there are varying ways that scholars view the extended path to adulthood. For example, in the U.K., most of the research on this period of life is sociological, examining the extension largely as a result of social and economic forces. In contrast, in the U.S. and Canada, most of the research is psychological, investigating changes in proximal relationships and in the nature of autonomy-seeking and identity conflicts (About Families, 2012). In fact, in the U.S., research has become even more reductionist, seeking evidence of changes in the brain as a marker of its protracted development, and it has become well-known that it is not until the mid-twenties that the brain is capable of truly adult decision making (e.g., Steinberg, 2010b). Perhaps this neural basis would support Arnett's perspective of the "normality" of the stage of emerging adulthood, as one could argue that emerging adulthood is a period of time during which the demands for independence exceed the capacities of the brain (e.g. Steinberg, 2010b). If this is the case , the preservation of “parental allies” through continuous communication may be a critical scaffold for young adult decision making .

It may well be that we will have to go even further in linking the sociological and psychological in order to come to terms with the variations in developmental staging that result from altering demands of social adaptation and technological advances. Perhaps an ecological

perspective (Bronfenbrenner, 1979; 1986) best serves as a framework in understanding development post-adolescence by examining the processes and interactions that take place within the many interrelated environmental settings. Increased connectivity interacts with family, peer, school, cultural, and historical factors to influence a person's development over time and across environments.

There are also differing perspectives as to how to refer to the post-adolescent period. Those who use the term "extended adolescence" seem to do so as a pejorative term for the young used to highlight their immaturity. These individuals may focus on the importance of autonomy and firm independent identity as essential to the post-adolescent period, and will almost certainly be alarmed by this study's revelation of the frequency of parental communication and the apparent inhibition of autonomy development in college students. Those, like Arnett, who view the period as a true and growth-filled stage of life and refer to it as "emerging adulthood", imply that this stage is a natural and adaptive mark of the times rather than a pathological interruption of normal development. Of gaining autonomy from parents, they might ask, "What's the rush?" Whatever the term one uses, close relationships with parents and frequent communication may be the new norm for digital natives.

Like most social changes, technological advances will likely open up opportunities for college students' growth and possibly constrain others. And, as with most issues that all caring parents face, holding on and letting go is a delicate balance, and no parent or child is perfect in

attaining it. Meanwhile, researchers, college administrators, parents, and students, can work together towards an understanding of best practices during the transition to college and beyond.

## Appendix A

### A1: Demographics (created for this study)

*Please mark the appropriate response to each question.*

1. What is your birth date? MM/DD/YYYY
2. Do you think that you have reached adulthood?
  - A) No
  - B) Yes
  - C) In some respects yes, in some respects no
3. You are:
  - A) Male
  - B) Female
  - C) Transgender
4. How would you describe yourself? (option to choose more than one)
  - A) African American (Black)
  - B) American Indian/Native American
  - C) Asian or Pacific Islander
  - D) Caucasian (European American)
  - E) Hispanic/Latino (Mexican American, Puerto Rican, Cuban, etc.)
  - F) Other (specify) \_\_\_\_\_
5. Where do you live now? That is, where do you stay most often when you live at school?
  - A) Your parents' home
  - B) Apartment/house with same-sex roommates
  - C) Apartment/house with co-ed roommates
  - D) Apartment without roommates
  - E) Same-sex college housing (on-campus dorms, apartments, etc.)
  - F) Co-ed college housing (on-campus dorms, apartments, etc.)
  - G) Sorority/fraternity house
  - H) Other (specify)
6. What year of college are you in?
  - A) 1<sup>st</sup> year of college

- B) 2<sup>nd</sup> year of college
- C) 3<sup>rd</sup> year of college
- D) 4<sup>th</sup> year of college
- E) 5<sup>th</sup> year of college

7. How much financial assistance for the current year's educational expenses do you receive from family resources such as parents?
- A) None
  - B) Up to 25%
  - C) Up to 50%
  - D) Up to 74%
  - E) 75% or more

This section addresses family structures. We understand that familial arrangements have become increasingly diverse. In this section, we ask you to provide us with a description of your family's arrangement in a free-response form, so that we are better able to understand everyone's individual situation fully. Responses consider information from the time you were born until now, and should include deaths, divorces, remarriages, and living situations. Please also indicate whether you have siblings, and your birth order.

Use the examples below as a guide. If you have any questions, please feel free to ask the researcher.

Example 1:

-Parents were married at the time of my birth. Lived with both parents until they divorced when I was 9. I split my time equally between both households. Father remarried when I was 15. Mother remarried when I was 17. I have two younger siblings from my father's second marriage who also live predominantly in my father's household.

Example 2:

-Parents not married at birth. Father died when I was 2, lived with mother all of my life. Grandmother also lives in our house. One older sibling who also lives in my mother's household.

Example 3:

-Parents married at my birth. Currently married and live in same household where I also reside. No siblings.

Provide response here (*Note: large text box provided in Qualtrics for this response*):

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The questions below ask you to choose a primary and secondary parental figure who you will think about when answering questions about “parents” throughout the survey. For example, some people will choose “biological mother” and “biological father” for primary and secondary parent relationships. Please select the answers that are most appropriate for your family structure. If you only have one living parental figure, you may select “I don’t have anyone as a secondary figure” for question 9.

8. Who is the most important caregiver or primary parental figure in your life?

- A) Adoptive mother
- B) Adoptive father
- C) Biological mother
- D) Biological father
- E) Foster-mother
- F) Foster-father
- G) Grandmother
- H) Grandfather
- I) Stepmother
- J) Stepfather
- K) Another female mother-figure (describe) \_\_\_\_\_
- L) Another male father-figure (describe) \_\_\_\_\_

9. Please type in this person’s name (e.g., “Mom” or “Sally”). This name will be used throughout the survey to refer to your primary parental figure. (*Note: This will be piped into Qualtrics to include the person’s name in each question for clarity.*)

10. Who is the secondary parental figure in your life?

- A) Adoptive mother
- B) Adoptive father
- C) Biological mother
- D) Biological father
- E) Foster-mother
- F) Foster-father
- G) Grandmother
- H) Grandfather
- I) Stepmother

- J) Stepfather
- K) Another female mother-figure (describe) \_\_\_\_\_
- L) Another male father-figure (describe) \_\_\_\_\_
- M) I do not have anyone who I consider to be a secondary parental figure [*Note: If this response is selected, questions regarding secondary parental figure will not appear in the online survey*]

11. Please type in this person's name (e.g., "Dad" or "John") [*Note: This will be piped into Qualtrics to include the person's name in each question for clarity.*] \_\_\_\_\_

11a. Does [primary parent] currently live in the same household as [secondary parent]?

- A) No
- B) Yes

13. What is the highest degree or level of school [primary parent] has completed? If currently enrolled, mark the previous grade or highest degree received.

- A) No high school diploma
- B) High School graduate or equivalent (For Example: GED)
- C) Some college, no degree
- D) Vocational/Technical Certificate
- E) Associates or two-year degree (for example: AA, AS)
- F) Bachelor's or four-year degree (for example: BA, AB, BS)
- G) Some graduate or professional school
- H) Graduate degree (MA, MBA, PhD, MD, JD, etc.) (please specify)

\_\_\_\_\_

14. What is [primary parent's] current occupation? \_\_\_\_\_

15. What is the highest degree or level of school [secondary parent] has completed? If currently enrolled, mark the previous grade or highest degree received.

- A) No high school diploma
- B) High School graduate or equivalent (For Example: GED)
- C) Some college, no degree
- D) Vocational/Technical Certificate
- E) Associates or two-year degree (for example: AA, AS)
- F) Bachelor's or four-year degree (for example: BA, AB, BS)
- G) Some graduate or professional school
- H) Graduate degree (MA, MBA, PhD, MD, JD, etc.) (please specify)

\_\_\_\_\_

16. What is [secondary parent's] current occupation? \_\_\_\_\_

17. What is your birth order?

A) Oldest

B) Middle

C) Youngest

D) Only child

E) Other response \_\_ (open-ended) \_\_\_\_\_

18. What is the zip code of your home town? \_\_\_\_\_

19. What kind of high school did you attend?

A) Public

B) Parochial

C) Private

D) Home school

20. During high school, did you live away from home?

A) No

B) Yes

**Appendix A2: College Students' Communication with Parents Questionnaire (created for this study)**

*[Note: Questions will be asked separately and in succession for primary and secondary parent. Questions were typed only once into IRB protocol for the sake of space/repetition.]*

The following questions ask about your general use of electronic communication devices, and about your communication with parents. Please answer thoughtfully and honestly. Remember, if you are uncomfortable answering a particular question, you may skip it. Your answers will be kept confidential.

**CELL PHONE USE**

The first set of questions asks about your cell phone use. Please have your cell phone handy and charged so that you can use your call history to help you answer the questions accurately.

1. Do you have your own cell phone?
  - A) Yes
  - B) No (skip pattern)
  
2. If yes, is your cell phone a "smart phone" (e.g., iPhone, Droid)?
  - A) Yes
  - B) No
  
3. Who pays for your cell phone plan?
  - A) You
  - B) Parent(s)
  - C) You and your parents both contribute
  - D) Other \_\_\_\_\_
  
4. On an average day, how many cell phone calls do you **receive** in total? \_\_\_\_
  
5. On an average day, how many cell phone calls do you **make** in total? \_\_\_\_
  
6. Who do you call the most on your cell phone?
  - A) Primary Parent
  - B) Secondary Parent
  - C) Other family member
  - D) Boyfriend/girlfriend
  - E) Best Friend
  - F) Other (specify)

7. How many phone calls did you **make** to [primary parent] [secondary parent] in the past 7 days?  
\_\_\_
8. How many phone calls did you **receive** from [primary parent] [secondary parent] in the past 7 days? \_\_\_
9. Please describe your cell phone communication with your parent(s). How often do you talk, and for how long? What do you talk about? How do you feel about the frequency and topics of your cell phone communication with your parent(s)? (open-ended)

### TEXTING

This set of questions asks about your texting habits. Please have your cell phone handy and charged so that you can use your text history to help you answer the questions accurately.

10. Does your cell phone have texting capabilities?  
A) Yes  
B) No (skip pattern)
11. Does your phone plan allow unlimited texting?  
A) Yes  
B) No
12. If no, how many texts are included in your plan per month? \_\_\_\_
13. On an average day, about how many text messages do you **send** on your cell phone?  
\_\_\_(open-ended)
14. On an average day, about how many text messages do you **receive** on your cell phone?  
\_\_\_(open-ended)
15. Who do you text the most on your cell phone?  
A) Primary Parent  
B) Secondary Parent  
C) Other family members  
D) Boyfriend/girlfriend  
E) Best Friend  
F) Other (specify)

16. Does [primary parent] [secondary parent] text?

- A) Yes
- B) No (skip pattern)

17. How many texts did you **send** to [primary parent] [secondary parent] in the last 7 days?  
\_\_\_\_(open-ended)

18. How many texts did you **receive** from [primary parent] [secondary parent] in the last 7 days?  
\_\_\_\_(open-ended)

19. Please describe your texting communication with your parent(s). How often do you text? What do you text about? How do you feel about the frequency and topics of your texting communication with [primary parent] [secondary parent]? (open-ended)

#### EMAILING

The following questions ask about your use of email. Please open your email account in a separate browser window to help you answer these questions.

20. Does your [primary parent] [secondary parent] use email?

- A) Yes
- B) No (skip pattern)

21. How many emails did you **send** to [primary parent] [secondary parent] in the past 7 days?  
(open-ended)

22. How many emails did you **receive** from [primary parent] [secondary parent] in the past 7 days?  
(open-ended)

23. Please describe your email communication with your parent(s). How often do you email? What types of things do you email each other about? How do you feel about the frequency and topics of your email communication with [primary parent] [secondary parent]? (open-ended)

#### FACEBOOK

The following questions ask specifically about your use of Facebook. Please open your Facebook profile in a separate browser window to help you answer the following questions.

24. How many Facebook “friends” do you have on your friend list? (Please check your profile and give an exact number rather than guessing.) \_\_\_\_\_

25. About how often do you check your Facebook news feed or profile?

- A) Never

- B) Rarely
- C) Every few weeks
- D) 1-2 days a week
- E) 3-5 days a week
- F) About once a day
- G) Several times a day

26. How often, if ever, do you change or update your status on Facebook?

- A) Never
- B) Rarely
- C) Every few weeks
- D) 1-2 days a week
- E) 3-5 days a week
- F) About once a day
- G) Several times a day

27. How often, if ever, do you post pictures on Facebook?

- A) Never
- B) Rarely
- C) Every few weeks
- D) 1-2 days a week
- E) 3-5 days a week
- F) About once a day
- G) Several times a day

28. Do you post things on Facebook (e.g., photos, status updates, links)...

- A) Less than most of your friends at Duke
- B) About as much as most of your friends at Duke
- C) More than most of your friends at Duke

The following questions ask about your parents' use of Facebook. You may not know for sure the answers to questions about your parents' Facebook habits, but try your best to answer based on the knowledge you have.

29. Does [primary parent] [secondary parent] have a Facebook profile?

- A) No (skip pattern)
- B) Yes

30. (If yes) Are you currently friends with [primary parent] [secondary parent] on Facebook? (skip pattern)

- A) No
- B) Yes

31. If no, how do you feel about not being friends with [primary parent] [secondary parent] on Facebook? (open-ended)

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32. If yes, who initiated the friend request?

- A) My [primary parent] [secondary parent] sent me a friend request.
- B) I sent [primary parent] [secondary parent] a friend request.

39. When you became friends with [primary parent] [secondary parent] on Facebook were you...?

- A) In middle school/junior high
- B) In high school
- C) In college

40. How much do you like being friends with your [primary parent] [secondary parent] on Facebook now?

- A) Strongly dislike it
- B) Dislike it
- C) Neither like nor dislike it
- D) Like it
- E) Like it a lot

41. Please elaborate on the origins of your Facebook friendship with [primary parent] [secondary parent]. How did you become friends? Was it voluntary or part of an agreement with your parent(s)? Why do you think [primary parent] [secondary parent] wanted to be friends with you on Facebook?

---

42. How many friends does [primary parent] [secondary parent] have on Facebook?

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43. About how often does [primary parent] [secondary parent] check his/her Facebook news feed or profile?

- A) Don't know
- B) Never
- C) Less often than every few weeks

- D) Every few weeks
- E) 1-2 days a week
- F) 3-5 days a week
- G) About once a day
- H) Several times a day

44. How often, if ever, does [primary parent] [secondary parent] change or update her/his status on Facebook?

- A) Don't know
- B) Never
- C) Less often than every few weeks
- D) Every few weeks
- E) 1-2 days a week
- F) 3-5 days a week
- G) About once a day
- H) Several times a day

45. How often, if ever, does [primary parent] [secondary parent] post photos on Facebook?

- A) Don't know
- B) Never
- C) Less often than every few weeks
- D) Every few weeks
- E) 1-2 days a week
- F) 3-5 days a week
- G) About once a day
- H) Several times a day

46. [Primary parent] [secondary parent] is active on Facebook

- A) Less so than most of your friends' parents
- B) About the same as most of your friends' parents
- C) More so than most of your friends' parents

47. Please describe any privacy settings you have in place on Facebook against [primary parent] [secondary parent]. (open-ended)

---

48. What type of content do you have on your profile that you would want to limit [primary parent] [secondary parent] from seeing? (open-ended)

---

49. Has [primary parent] [secondary parent] ever posted anything on Facebook about you? If yes, what types of things do they post and how do you feel about them?

A) No

B) Yes \_\_\_\_\_

50. Has [primary parent] [secondary parent] ever posted anything (about any topic) on Facebook that was surprising, upsetting, or embarrassing to you? If yes, please describe.

A) No

B) Yes \_\_\_\_\_

51. Please describe your Facebook communication with your parent(s). How do you use Facebook to communicate (e.g., Write on walls? Likes? Post pictures? Chat? Send messages?) How frequently? How do you feel about your Facebook communication with your parent(s)? What do you think your parent(s) main purpose is in looking at your Facebook profile?(open-ended)

\_\_\_\_\_

#### TWITTER

The following questions ask about your use of Twitter.

52. Do you have a Twitter account?

A) No (skip pattern)

B) Yes

53. On average, how often do you post to your Twitter account?

A) Never

B) Less often than every few weeks

C) Every few weeks

D) 1-2 days a week

E) 3-5 days a week

F) About once a day

G) Several times a day

54. Does [primary parent] [secondary parent] have a Twitter account?

A) No

B) Yes

55. If yes, does (s)he follow your Twitter account?

A) No

B) Yes

56. If yes, do you follow her/his Twitter account?  
A) No  
B) Yes
57. What privacy settings do you have on your account? \_\_\_\_\_
58. What do you like best about Twitter? \_\_\_\_\_
59. Please describe your use of Twitter to communicate with your parent(s). \_\_\_\_\_

### INSTAGRAM

The following questions ask about your use of Instagram.

60. Do you have an Instagram account?  
A) No (skip pattern)  
B) Yes
61. On average, how often do you post to your Instagram account?  
A) Don't know  
B) Never  
C) Less often than every few weeks  
D) Every few weeks  
E) 1-2 days a week  
F) 3-5 days a week  
G) About once a day  
H) Several times a day
62. Does [primary parent] [secondary parent] have an Instagram account?  
A) No  
B) Yes
63. If yes, does (s)he follow your Instagram account?  
A) No  
B) Yes
63. If yes, do you follow her/his Instagram account?  
A) No  
B) Yes

64. What privacy settings do you have on your Instagram account? \_\_\_\_\_

65. What do you like best about Instagram? \_\_\_\_\_

66. Please describe your Instagram communication with your parent(s). How do you use Instagram to communicate? How frequently? How do you feel about your Instagram communication with [primary parent] [secondary parent]? (open-ended) \_\_\_\_\_

#### VIDEO CHAT

The following questions ask about your use of video chat.

67. In general, about how often do you use video chat (e.g., Skype, GoogleTalk, FaceTime, etc.)

- A) Never
- B) Less often than every few weeks
- C) Every few weeks
- D) 1-2 days a week
- E) 3-5 days a week
- F) About once a day
- G) Several times a day

68. About how often do you video chat with [primary parent] [secondary parent]?

- A) Never
- B) Sporadically
- C) Once per month
- D) Weekly
- E) 4-5 times per week
- F) Daily

69. Please elaborate on your video chats with your parent(s). Do you plan a time for them? What do you talk about? What do you like about this type of communication? What do you dislike about it?

\_\_\_\_\_

#### NON-ELECTRONIC COMMUNICATION

The following section asks questions about non-electronic communication with your parent(s).

70. How many times have you received a card or letter via postal mail from your parents this semester? \_\_\_\_\_

71. How many times have you received a care package from your parents this semester? \_\_\_\_\_

72. How many times do you plan to visit home this semester? Please include any visits you have made or plan to make between August 27, 2012 and December 8, 2012. (Do not include when you plan to go home in December.) \_\_\_\_\_

73. How many times do your parent(s) plan to visit you at Duke this semester? Please include any visits either of your parents have made or intend to make between August 27, 2012 and December 8, 2012. (Do not include when they dropped you off in the fall or when they pick you up in December.)

#### PERCEPTIONS OF COMMUNICATION

The following section asks questions about communication with your parents in general and how you feel about it.

74. Before you went to college, did you and your parent(s) discuss how often you would communicate, and/or by what means?

- A) No
- B) Yes

75. If yes, what did you agree on? \_\_\_\_\_

76. Please indicate how often you communicate with [primary parent] [secondary parent] as compared to your expectations. Now that you are at school, do you communicate with [primary parent] [secondary parent]:

- A) Much less often than you expected
- B) Less often than you expected
- C) About as often as you expected
- D) More than you expected
- E) Much more than you expected

77. Please indicate your satisfaction with the **frequency** of communication with [primary parent] [secondary parent]. If you had your way, you and [primary parent] [secondary parent] would communicate:

- A) Much less often than you do now
- B) Less often than you do now
- C) About as often as you do now
- D) More than you do now
- E) Much more than you do now

78. How satisfied are you with the **quality** of your communication with [primary parent] [secondary parent]?

- A) Very dissatisfied

- B) Dissatisfied
- C) Neutral
- D) Satisfied
- E) Very satisfied

79. Does [primary parent] [secondary parent] expect to hear from you every day?

- A) No
- B) Yes

80. How close do you feel to your [primary parent] [secondary parent]?

- A) Not at all close
- B) Not close
- C) Close
- D) Very close

81. Do you consider [primary parent] [secondary parent] to be a friend?

- A) Yes
- B) No

82. Compared with your other friends at Duke, do you communicate with your parent(s)

- A) Less than most of your friends at Duke communicate with their parent(s)
- B) About as much as most of your friends at Duke communicate with their parent(s)
- C) More than most of your friends at Duke communicate with their parent(s)

83. What is your most preferred form of communication with [primary parent] [secondary parent]?

- A) Cell phone
- B) Text
- C) Email
- D) Instant message
- E) Facebook
- F) Video chat
- G) Other \_\_\_\_\_

84. Below is a list of topics college students might discuss with their parents. For each item, please indicate:

- 1) How often you discuss that topic with [primary parent] [secondary parent]?

- 2) Whether or not you ask for her/his advice on that topic  
 3) Whether [primary parent] [secondary parent] offers *unsolicited* advice on the topic

	How often do you discuss with your mother/father?					Do you ask for advice about this topic?		Does (s)he offer unsolicited advice on this topic?	
	Never	Rarely	Sometimes	Often	Very Often	No	Yes	No	Yes
Current coursework	1	2	3	4	5	No	Yes	No	Yes
Choosing courses	1	2	3	4	5	No	Yes	No	Yes
Career plans	1	2	3	4	5	No	Yes	No	Yes
Study abroad	1	2	3	4	5	No	Yes	No	Yes
Volunteerism	1	2	3	4	5	No	Yes	No	Yes
Problems with roommate	1	2	3	4	5	No	Yes	No	Yes
Problems with friend(s)	1	2	3	4	5	No	Yes	No	Yes
Problems with romantic relationships	1	2	3	4	5	No	Yes	No	Yes
Problems with other family members	1	2	3	4	5	No	Yes	No	Yes
Health problems	1	2	3	4	5	No	Yes	No	Yes
Health promotion	1	2	3	4	5	No	Yes	No	Yes
Religious	1	2	3	4	5	No	Yes	No	Yes
Athletic	1	2	3	4	5	No	Yes	No	Yes
Financial	1	2	3	4	5	No	Yes	No	Yes
Alcohol use	1	2	3	4	5	No	Yes	No	Yes
Sex	1	2	3	4	5	No	Yes	No	Yes
Laundry	1	2	3	4	5	No	Yes	No	Yes
Cooking	1	2	3	4	5	No	Yes	No	Yes
Fashion	1	2	3	4	5	No	Yes	No	Yes
Other	1	2	3	4	5	No	Yes	No	Yes

85. Since you started college, how often has [primary parent] [secondary parent] done the following:

	Never	Rarely	Sometimes	Often	Very Often
Called you with a wakeup call	1	2	3	4	5
Reminded you of an upcoming test or paper	1	2	3	4	5
Had a copy of your course syllabus	1	2	3	4	5
Used your email or login ID to register you for classes or conduct other college business	1	2	3	4	5
Edited an assignment or paper for you via email	1	2	3	4	5
Contacted one of your professors with a complaint about a grade	1	2	3	4	5
Contacted your roommate about a conflict you had	1	2	3	4	5
Contacted your roommate's parent(s)	1	2	3	4	5
Contacted your resident advisor on your behalf	1	2	3	4	5
Contacted another college housing official on your behalf	1	2	3	4	5

86. For each of the following items, please use the scale below to indicate how often your [primary parent] [secondary parent] does these things via each different medium. (asked for cell phone, texting, video chat, and Facebook).

1                      2                      3                      4                      5  
 Never                Rarely                Sometimes            Often                Very Often

	Cell/Text/Video Chat/Facebook				
Asks about your day.	1	2	3	4	5
Provides you with emotional support.	1	2	3	4	5
Receives emotional support from you.	1	2	3	4	5
Shares news from home.	1	2	3	4	5
Shares stories about current events, sports, or entertainment.	1	2	3	4	5
Checks on your well-being.	1	2	3	4	5
Exerts pressure on you to perform well academically.	1	2	3	4	5
Exerts pressure on you to pursue a certain career.	1	2	3	4	5
Cheers you up.	1	2	3	4	5
Learns more about your romantic relationships.	1	2	3	4	5
Learns more about your friends.	1	2	3	4	5
Offers you financial assistance.	1	2	3	4	5
Eases your anxieties about being away from him/her.	1	2	3	4	5
Eases his/her anxieties about being away from you.	1	2	3	4	5
Learns more about your life at school.	1	2	3	4	5
Makes plans.	1	2	3	4	5
Learns more about your alcohol use.	1	2	3	4	5
Offers suggestions for how to do well in school.	1	2	3	4	5
Finds out where you're going at night.	1	2	3	4	5
Finds out how you spend your money.	1	2	3	4	5
Tells you he/she loves you.	1	2	3	4	5
annoys you.	1	2	3	4	5
Helps you solve a problem.	1	2	3	4	5
Talks to you about alcohol use.	1	2	3	4	5
Talks to you about sexual health.	1	2	3	4	5
Finds out how you are doing in your classes.	1	2	3	4	5
Argues with you.	1	2	3	4	5
Finds out if you need anything.	1	2	3	4	5
Nags you about school.	1	2	3	4	5
Nags you about your future.	1	2	3	4	5
Asks you for advice.	1	2	3	4	5
Listens to you "vent" or complain.	1	2	3	4	5
Tells you how to handle academic challenges.	1	2	3	4	5
Other (describe)	1	2	3	4	5

90. What is the best thing about your relationship with [primary parent] [secondary parent]?



My parent feels that most problems in society would be solved if parents would not restrict their children's activities, decisions, and desires as they are growing up.	1	2	3	4	5	1	2	3	4	5
As I was growing up my parent let me know what behavior (s)he expected of me, and if I didn't meet those expectations, (s)he punished me.	1	2	3	4	5	1	2	3	4	5
As I was growing up my parent allowed me to decide most things for myself without a lot of direction from him/her.	1	2	3	4	5	1	2	3	4	5
As I was growing up my parent took the children's opinions into consideration when making family decisions, but (s)he would not decide something simply because the children wanted it.	1	2	3	4	5	1	2	3	4	5
My parent did not view him/herself as responsible for directing and guiding my behavior as I was growing up - (s)he felt that this was my responsibility.	1	2	3	4	5	1	2	3	4	5
My parent had clear standards of behavior for the children in our home as I was growing up, but (s)he was willing to adjust those standards to the needs of each of the individual children in the family.	1	2	3	4	5	1	2	3	4	5
My parent gave me direction for my behavior and activities as I was growing up and expected me to follow her direction, but was always willing to listen to my concerns and to discuss that direction with me.	1	2	3	4	5	1	2	3	4	5
As I was growing up my parent allowed me to form my own point of view on family matters and generally allowed me to decide for myself what I was going to do.	1	2	3	4	5	1	2	3	4	5
My parent has always felt that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when they don't do as they're supposed to as they are growing up.	1	2	3	4	5	1	2	3	4	5
As I was growing up my parent often told me exactly what (s)he wanted me to do and how (s)he expected me to do it.	1	2	3	4	5	1	2	3	4	5
As I was growing up my parent gave me clear direction for my behaviors and activities, but was also understanding when I disagreed with him/her.	1	2	3	4	5	1	2	3	4	5
As I was growing up my parent did not direct the behaviors, activities, and desires of the children in the family because (s)he felt that we should decide these things for ourselves.	1	2	3	4	5	1	2	3	4	5
As I was growing up I knew what my parent expected of me in the family and (s)he insisted that I conform to those expectation simply out of respect for his/her authority.	1	2	3	4	5	1	2	3	4	5
As I was growing up, if my parent made a decision in the family that hurt me, (s)he was willing to discuss that decision with me and to admit it if (s)he had made a mistake.	1	2	3	4	5	1	2	3	4	5

**Appendix A4: Helicopter Parenting (Padilla-Walker & Nelson, 2012)**

1	2	3	4	5
Not at all like him/her	A little like him/her	Moderately like him/her	Quite a bit like him/her	A lot like him/her

Please rate each of the following items about your parent(s) according to the scale. Please rate each item separately for each parental figure.

	[Primary Parent]/ [Secondary Parent]				
Makes important decisions for me (e.g., where I live, where I work, what classes I take).	1	2	3	4	5
Intervenes in settling disputes with my roommates or friends.	1	2	3	4	5
Intervenes in solving problems with my employers or professors.	1	2	3	4	5
Solves any crisis or problem I might have.	1	2	3	4	5
Looks for jobs for me or tries to find other opportunities for me (e.g., internships, study abroad).	1	2	3	4	5

## Appendix A5: Emotional Autonomy Questionnaire (Steinberg & Silverberg, 1986)

Please rate the following items. (R = Reverse coded items; highlighted items are part of the Separation Scale (Beyers et al., 2005).

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. My parents and I agree on everything. ( R )	1	2	3	4
2. I go to my parents for help before trying to solve a problem myself. ( R )	1	2	3	4
3. I have often wondered how my parents act when I'm not around.	1	2	3	4
4. Even when my parents and I disagree, my parents are always right. ( R )	1	2	3	4
5. It's better for kids to go to their best friend than to their parents for advice on some things.	1	2	3	4
6. When I've done something wrong, I depend on my parents to straighten things out for me. ( R )	1	2	3	4
7. There are some things about me that my parents don't know.	1	2	3	4
8. My parents act differently when they are with their own parents from the way they do at home.	1	2	3	4
9. My parents know everything there is to know about me. ( R )	1	2	3	4
10. I might be surprised to see how my parents act at a party.	1	2	3	4
11. I try to have the same opinions as my parents. ( R )	1	2	3	4
12. When they are at work, my parents act pretty much the same way they do when they are at home.	1	2	3	4
13. If I was having a problem with one of my friends, I would discuss it with my mother or father before deciding what to do about it. ( R )	1	2	3	4
14. My parents would be surprised to know what I'm like when I'm not with them.	1	2	3	4
15. When I become a parent, I'm going to treat my children in exactly the same way that my parents have treated me. ( R )	1	2	3	4
16. My parents probably talk about different things when I am around from what they talk about when I'm not.	1	2	3	4
17. There are things that I will do differently from my mother and father when I become a parent.	1	2	3	4
18. My parents hardly ever make mistakes. ( R )	1	2	3	4
19. I wish my parents would understand who I really am.	1	2	3	4
20. My parents act pretty much the same way when they are with their friends as they do when they are at home with me.	1	2	3	4

**Appendix A6: Student Adaptation to College Questionnaire (Baker & Siryk, 1984)**

1----- 2----- 3----- 4----- 5----- 6----- 7----- 8----- 9  
 Doesn't apply to me at all Applies very closely to me

Please rate the following items for each parent using the scale above.

- |  |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|
| 1. I feel that I fit in well as part of the Duke environment.                              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2. I have been feeling tense or nervous lately.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 3. I have been keeping up to date on my academic work.                                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4. I am meeting as many people, and making as many friends, as I would like at Duke .      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 5. I know why I'm in college and what I want out of it.                                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 6. I am finding academic work at Duke difficult.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 7. Lately I have been feeling blue and moody a lot.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 8. I am very involved with social activities in college.                                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 9. I am adjusting well to college.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10. I have not been functioning well during examinations.                                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 11. I have felt tired much of the time lately.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 12. Being on my own, taking responsibility for myself, has not been easy.                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 13. I am satisfied with the level at which I am performing academically.                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 14. I have had informal, personal contacts with Duke professors.                           | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 15. I am pleased now about my decision to go to college.                                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 16. I am pleased now about my decision to attend Duke in particular.                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 17. I'm not working as hard as I should at my coursework.                                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 18. I have several close social ties at Duke.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 19. My academic goals and purposes are well-defined.                                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 20. I haven't been able to control my emotions very well lately.                           | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 21. I'm not really smart enough for the academic work I am expected to be doing right now. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 22. Lonesomeness for home is a source of difficulty for me now.                            | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

23. Getting a college degree is very important to me.	1	2	3	4	5	6	7	8	9
24. My appetite has been good lately.	1	2	3	4	5	6	7	8	9
25. I haven't been very efficient in the use of my study time lately.	1	2	3	4	5	6	7	8	9
26. I enjoy living in a college housing. (Please skip if you do not live in college housing).	1	2	3	4	5	6	7	8	9
27. I enjoy writing papers for courses.	1	2	3	4	5	6	7	8	9
28. I have been having a lot of headaches lately	1	2	3	4	5	6	7	8	9
29. I really haven't had much motivation for studying lately.	1	2	3	4	5	6	7	8	9
30. I am satisfied with the extracurricular activities available at Duke.	1	2	3	4	5	6	7	8	9
31. I've given a lot of thought lately to whether I should ask for help from the Health Center, or from a psychotherapist outside of Duke.	1	2	3	4	5	6	7	8	9
32. Lately I have been having doubts regarding the value of a college education.	1	2	3	4	5	6	7	8	9
33. I am getting along very well with my roommate at Duke (Please omit if you do not have a roommate.)	1	2	3	4	5	6	7	8	9
34. I wish I were at another college or university rather than Duke.	1	2	3	4	5	6	7	8	9
35. I've put on (or lost) too much weight recently.	1	2	3	4	5	6	7	8	9
36. I am satisfied with the number and variety of courses available at Duke.	1	2	3	4	5	6	7	8	9
37. I feel that I have enough social skill to get along well in the college setting.	1	2	3	4	5	6	7	8	9
38. I have been getting angry too easily lately.	1	2	3	4	5	6	7	8	9
39. Recently I have had trouble concentrating when I try to study.	1	2	3	4	5	6	7	8	9
40. I haven't been sleeping very well.	1	2	3	4	5	6	7	8	9
41. I'm not doing well enough academically for the amount of work I put in.	1	2	3	4	5	6	7	8	9
42. I am having difficulty feeling at ease with other people at Duke.	1	2	3	4	5	6	7	8	9
43. I am satisfied with the quality or the caliber of courses available at Duke.	1	2	3	4	5	6	7	8	9
44. I am attending classes regularly.	1	2	3	4	5	6	7	8	9

44. I am attending classes regularly.	1	2	3	4	5	6	7	8	9
45. Sometimes my thinking gets muddled up to easily.	1	2	3	4	5	6	7	8	9
46. I am satisfied with the extent to which I am participating in social activities at Duke.	1	2	3	4	5	6	7	8	9
47. I expect to stay at Duke for a bachelor's degree.	1	2	3	4	5	6	7	8	9
48. I haven't been mixing too well with the opposite sex lately.	1	2	3	4	5	6	7	8	9
49. I worry a lot about my college expenses.	1	2	3	4	5	6	7	8	9
50. I enjoy my academic work at college.	1	2	3	4	5	6	7	8	9
51. I have been feeling lonely a lot at Duke lately.	1	2	3	4	5	6	7	8	9
52. I am having a lot of trouble getting started on homework assignments.	1	2	3	4	5	6	7	8	9
53. I feel I have good control over my life situation at Duke.	1	2	3	4	5	6	7	8	9
54. I am satisfied with my program of courses for this semester.	1	2	3	4	5	6	7	8	9
55. I have been feeling in good health lately.	1	2	3	4	5	6	7	8	9
56. I feel I am very different from other students at Duke, in ways that I don't like.	1	2	3	4	5	6	7	8	9
57. On balance, I would rather be home than here.	1	2	3	4	5	6	7	8	9
58. Most of the things I am interested in are not related to any of my coursework at Duke.	1	2	3	4	5	6	7	8	9
59. Lately I have been giving a lot of thought to transferring to another college.	1	2	3	4	5	6	7	8	9
60. Lately I have been giving a lot of thought to dropping out of college altogether and for good.	1	2	3	4	5	6	7	8	9
61. I find myself giving considerable thought to taking time off from college and finishing later.	1	2	3	4	5	6	7	8	9
62. I am very satisfied with the professors I have now in my courses.	1	2	3	4	5	6	7	8	9
63. I have some good friends or acquaintances at Duke with whom I can talk about any problems I may have.	1	2	3	4	5	6	7	8	9
64. I am experiencing a lot of difficulty coping with the stressed imposed upon me in college.	1	2	3	4	5	6	7	8	9
65. I am quite satisfied with my social life at Duke.	1	2	3	4	5	6	7	8	9
66. I am quite satisfied with my academic situation at Duke	1	2	3	4	5	6	7	8	9
67. I feel confident that I will be able to deal in a satisfactory manner with future challenges here at Duke.	1	2	3	4	5	6	7	8	9

## Appendix B

### Supplemental Tables and Figures

*Table B1.* Increases in proportion of variation explained by entering parenting style into the final step of separate hierarchical regression models predicting contact with parents.

Parenting Style	DV=Cell Contact				DV=Text Contact				DV=Email Contact				DV=Total Contact			
	$\Delta R^2$	$\Delta F$	<i>df</i>	<i>p</i>	$\Delta R^2$	$\Delta F$	<i>df</i>	<i>p</i>	$\Delta R^2$	$\Delta F$	<i>df</i>	<i>p</i>	$\Delta R^2$	$\Delta F$	<i>df</i>	<i>p</i>
P1																
Permissive	.001	.19	1, 154	.67	.00	.01	1, 120	.92	.00	.27	1, 134	.60	.00	.06	1, 147	.81
Authoritative	.001	.27	1, 153	.61	.01	.80	1, 120	.37	.00	.64	1, 133	.42	.00	.64	1, 147	.80
Authoritarian	.02*	5.31*	1, 154	.02	.00	.12	1, 121	.73	.00	.04	1, 134	.84	.00	.04	1, 148	.85
Helicopter	.02*	4.79*	1, 155	.03	.01	.86	1, 120	.36	.00	.70	1, 134	.41	.01	.70	1, 148	.26
P2																
Permissive	.01	1.57	1, 146	.21	.00	.17	1, 97	.68	.02	2.22	1, 132	.14	.00	2.22	1, 141	.46
Authoritative	.02	3.51	1, 146	.06	.00	.10	1, 97	.75	.01	1.13	1, 132	.29	.01	1.13	1, 141	.22
Authoritarian	.02	3.12	1, 146	.08	.01	.62	1, 97	.44	.05**	8.57**	1, 132	.004	.00	8.57	1, 141	.44
Helicopter	.02*	4.79*	1, 147	.03	.00	.15	1, 98	.70	.00	.07	1, 33	.79	.00	.07	1, 141	.38

*Note.* \* $p < .05$ , \*\* $p < .01$ . Significant parenting style predictors are highlighted.

*Table B2.* Hierarchical regression analyses of simpler models predicting cell phone contact with primary parents from *parental closeness* (beta coefficients)

DV = Primary Parent Cell Phone Contact						
Predictor	Permissive Model			Authoritative Model		
	<i>B</i>	<i>SE b</i>	$\beta$	<i>B</i>	<i>SE b</i>	$\beta$
Parent 1	<i>n</i> = 166			<i>n</i> = 165		
Gender	2.54	1.34	1.90	2.60	1.34	1.94
Asian American	-1.56	1.3	-1.20	-1.60	1.30	-1.23
African American	6.18**	1.94	3.18**	6.14***	1.95	3.15***
Freshman	.62	1.14	.54	.67	1.14	.58
Days	-.02	.02	-1.02	-.02	.02	-.99
Distance	-.001	.001	-1.25	-.001	.001	-1.25
SES	.11	.07	1.48	.11	.07	1.50
Total cell use	.45***	.10	4.49***	.45***	.10	4.51***
Single parent	-1.73	1.45	-1.20	-1.74	1.45	-1.20
Parental closeness	2.11***	.86	2.44***	2.13*	.87	2.45*

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

*Table B3.* Hierarchical regression analyses of simpler model predicting cell phone contact with secondary parents from parental closeness (beta coefficients from permissive, authoritative, and authoritarian models)

DV = Secondary Parent Cell Phone Contact			
Predictor	<i>B</i>	<i>SE b</i>	$\beta$
Parent 2		<i>n</i> = 158	
Gender	.02	.06	.29
Asian American	-.10	.06	-1.70
African American	.11	.10	1.11
Freshman	.02	.05	.29
Days	-.002	.001	-2.02
Distance	.00	.00	.05
SES	.002	.003	.58
Total cell use	.02***	.004	3.88***
Single parent	-.01	.07	-.10
Parental closeness	.19***	.03	5.44***

Note. \*\*\* $p < .001$  Beta coefficient values were the same for the simpler parental closeness models in the permissive, authoritative, and authoritarian models.

Table B4. Summary statistics for nonsignificant hierarchical regression analyses predicting text messaging with parents from parenting style

Dependent Variable: Frequency of Text Messaging with Parents									
Final Predictor	$\Delta R^2$ for each step					Full Model Summary Statistics			
	Step 1 $\Delta R^2$	Step 2 $\Delta R^2$	Step 3 $\Delta R^2$	Step 4 $\Delta R^2$	Step 5 $\Delta R^2$	Total $R^2$	$F$	$df$	$p$
<b>P1 Parenting Style</b>									
Permissive	.04	.04*	.01	.03	.01	.12	1.55	11, 120	.12
Authoritative	.04	.04*	.01	.03	.01	.13	1.63	11, 120	.10
Authoritarian	.04	.04*	.01	.03	.01	.13	1.58	11, 120	.11
Helicopter	.05	.04*	.01	.04*	.01	.14	1.77	11, 120	.08
<b>P2 Parenting Style</b>									
Permissive	.06	.01	.00	.07**	.00	.14	1.44	11, 97	.17
Authoritative	.06	.01	.00	.07**	.00	.14	1.43	11, 97	.17
Authoritarian	.06	.01	.00	.07**	.01	.14	1.49	11, 97	.15
Helicopter	.06	.01	.00	.07**	.00	.13	1.38	11, 97	.20

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

*Table B5.* Hierarchical regression analyses of a simpler model predicting total contact with primary and secondary parents from parental closeness

DV = Total Contact					
Simpler Model Summary Statistics					
Final Predictor = Parental Closeness	Step 4 $\Delta R^2$	Total $R^2$	$F$	$df$	$p$
<b>P1 Models</b>					
Permissive	.03*	.23	3.95	11, 148	<.001
Authoritative	.03*	.23	3.95	11, 148	<.001
Authoritarian	.03*	.23	3.97	11, 149	<.001
Helicopter	.05*	.25	4.39	11, 149	<.001
<b>P2 Models</b>					
Permissive	.11*	.31	3.86	11, 142	<.001
Authoritative	.11*	.32	3.80	11, 142	<.001
Authoritarian	.11*	.32	3.86	11, 142	<.001
Helicopter	.11*	.31	3.52	11, 142	<.001

*Note.* \* $p < .05$

Table B6. Hierarchical regression analyses of a simpler model predicting total contact from parental closeness (beta coefficients)

Dependent Variable: Total Contact												
Final Predictor: Parental Closeness	Permissive			Authoritative			Authoritarian			Helicopter		
	<i>B</i>	<i>SE b</i>	$\beta$									
Parent 1	<i>n</i> = 166			<i>n</i> = 165			<i>n</i> = 166			<i>n</i> = 167		
Gender	6.39	5.97	.10	6.39	5.97	.10	6.29	5.93	.09	9.26	5.98	.14
Asian American	-9.32	5.89	-.12	-9.32	5.89	-.12	-9.25	5.86	-.12	-8.76	5.86	-.11
African American	-.54	8.56	-.01	-.54	8.56	-.01	-.50	8.53	-.01	4.71	8.40	.04
Freshman	6.96	5.07	.10	6.96	5.07	.10	6.87	5.04	.10	6.13	5.07	.09
Days	-.14	.10	-.12	-.14	.10	-.12	-.14	.10	-.12	-.12	.10	-.11
Distance	-.002	.003	-.04	-.002	.003	-.04	-.002	.003	-.04	-.01	.00	-.04
SES	.27	.32	.06	.27	.32	.06	.27	.32	.06	.29	.33	.07
Total cell use	.92*	.44	.16*	.91*	.44	.16*	.93*	.44	.16*	.89*	.44	.15*
Total text use	.07**	.03	.20**	.07**	.03	.20**	.07**	.03	.20**	.07**	.03	.21**
Single parent	-4.64	6.36	-.06	-4.64	6.36	-.06	-4.64	6.34	-.06	-2.13	6.34	-.03
Parental closeness	9.79*	3.81	.19*	9.79*	3.81	.19*	9.75*	3.80	.19*	11.38*	3.76	.22*
Parent 2	<i>n</i> = 158			<i>n</i> = 158			<i>n</i> = 158			<i>n</i> = 159		
Gender	.06	.10	.06	.06	.10	.06	.06	.10	.06	.04	.10	.04
Asian American	-.20	.10	-.16	-.20	.10	-.16	-.20	.10	-.16	-.18	.10	-.15
African American	-.06	.16	-.03	-.06	.16	-.03	-.06	.16	-.03	-.03	.16	-.01
Freshman	-.01	.09	-.01	-.01	.09	-.01	-.01	.09	-.01	-.03	.09	-.02
Days	-.001	.00	-.05	-.001	.00	-.05	-.001	.00	-.05	-.001	.00	-.06
Distance	-.003	.00	-.06	-.003	.00	-.06	-.003	.00	-.06	-.003	.00	-.06
SES	.007	.01	.10	.007	.01	.10	.007	.01	.10	.007	.01	.11
Total cell use	.01	.01	.10	.01	.01	.10	.01	.01	.10	.01	.01	.10
Total text use	.001*	.00	.20*	.001*	.00	.20*	.001*	.00	.20*	.001*	.00	.18*
Single parent	.04	.11	.03	.04	.11	.03	.04	.11	.03	.04	.11	.04
Parental closeness	.25***	.06	.34***	.25***	.06	.34***	.25***	.06	.34***	.24***	.06	.33***

*Table B7.* Separate logistic regression models predicting college students' Facebook friendships with parents from parenting style (nonsignificant)

Predictor	<i>B</i>	<i>S.E.</i>	Wald	<i>p</i>	Odds Ratio
<b>Primary Parent</b>					
P1 Permissive	.02	.04	.20	.66	1.01
P1 Authoritative	.05	.04	1.94	.16	1.05
P1 Authoritarian	-.01	.03	.03	.87	1.00
P1 Helicopter	-.01	.06	.04	.85	.99
<b>Secondary Parent</b>					
P2 Permissive	-.06	.05	1.38	.24	.94
P2 Authoritative	-.01	.05	.02	.89	.99
P2 Authoritarian	.03	.04	.55	.46	1.03
P2 Helicopter	.001	.08	.00	.99	1.00

*Table B8.* Summary of hierarchical regression analyses examining the moderating role of cell phone contact with parents on the relationship between parenting style and academic adjustment to college

Final Predictor	Dependent Variable: Academic Adjustment				R <sup>2</sup> Total
	Step 1 ΔR <sup>2</sup>	Step 2 ΔR <sup>2</sup>	Step 3 ΔR <sup>2</sup>	Step 4 ΔR <sup>2</sup>	
<b>P1 Parenting Style</b>					
Permissive	.12*	.00	.00	.00	.13
Authoritative	.12*	.03*	.00	.00	.16
Authoritarian	.12*	.01	.00	.00	.14
Helicopter	.12*	.00	.00	.00	.13
<b>P2 Parenting Style</b>					
Permissive	.12*	.01	.00	.02	.15
Authoritative	.12*	.06**	.00	.01	.18
Authoritarian	.12*	.01	.00	.02	.15
Helicopter	.12*	.02	.00	.01	.16

*Note:* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Variables were entered in the following order: Step 1: Gender, African American, Asian American, year in school, total cell phone use, and parental closeness. Step 2: primary parent parenting style, Step 3: cell phone contact with primary parent, Step 4: parenting style x cell phone contact.

*Table B9.* Summary of hierarchical regression analyses examining the moderating role of cell phone contact with parents on the relationship between parenting style and social adjustment to college

Final Predictor	Dependent Variable: Social Adjustment				R <sup>2</sup> Total
	Step 1 $\Delta R^2$	Step 2 $\Delta R^2$	Step 3 $\Delta R^2$	Step 4 $\Delta R^2$	
<b>P1 Parenting Style</b>					
Permissive	.05	.00	.01	.00	.06
Authoritative	.05	.00	.00	.01	.07
Authoritarian	.05	.00	.00	.00	.08
Helicopter	.06	.00	.00	.00	.08
<b>P2 Parenting Style</b>					
Permissive	.06	.00	.00	.00	.06
Authoritative	.06	.00	.00	.01	.07
Authoritarian	.06	.01	.00	.02	.08
Helicopter	.06	.00	.00	.02	.08

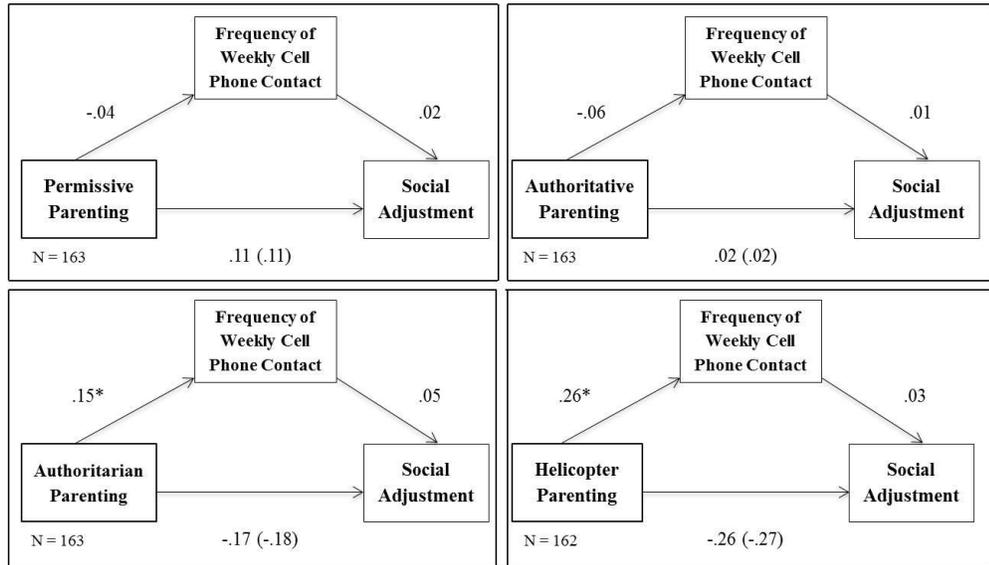
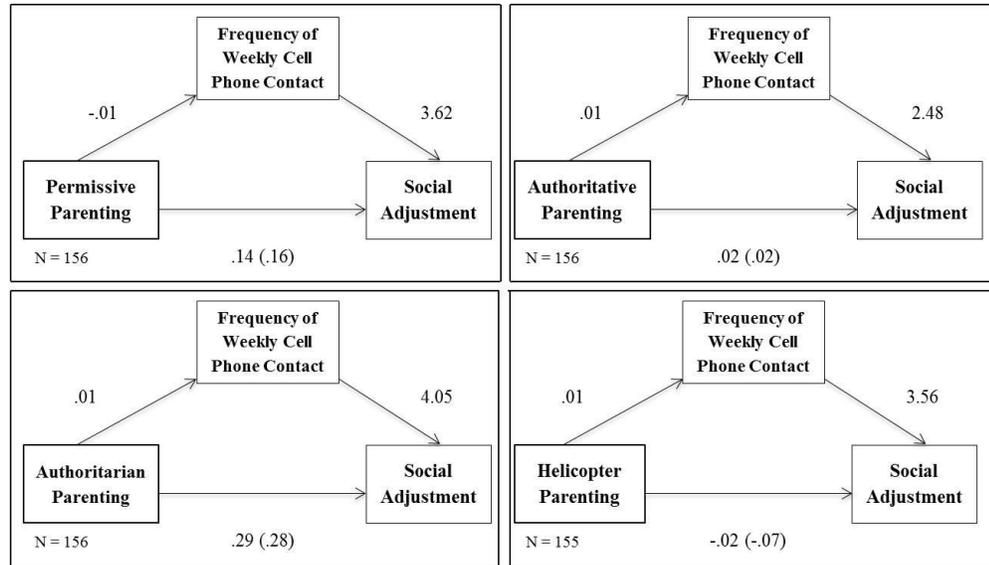


Figure B1. Primary parents' cell phone contact does not mediate the relationship between parenting style and college social adjustment.



*Figure B2.* Secondary parents' cell phone contact does not mediate the relationship between parenting style and college social adjustment.

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## **Biography**

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