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The role of communication technology in adolescent relationships and identity development

Betty-Ann Cyr
University of Central Florida

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THE ROLE OF COMMUNICATION TECHNOLOGY IN
ADOLESCENT RELATIONSHIPS AND IDENTITY DEVELOPMENT

by

BETTY-ANN CYR

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Psychology
in the College of Sciences
and in The Burnett Honors College
at the University of Central Florida
Orlando, Florida

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Thesis Chair: Dr. Steven L. Berman

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ABSTRACT

Text messaging, e-mail, instant messaging, and social networking sites are changing the way people interact with each other. The popularity of these communication technologies among emerging adults in particular has grown exponentially, with little accompanying research to understand their influences on psychosocial development. This study explores the relationship between communication technology usage (text messaging, e-mail, instant messaging, and social networking) and adolescent adjustment among 268 high school students.

It was hypothesized that use of communication technology would be related to psychological adjustment, including identity development, relationship attachment and peer conflict. Participants were recruited from three public high schools in central Florida (69% female, 81.9% White). Time spent using communication technology was significantly correlated with psychological symptom severity (i.e. anxiety and depression), identity distress, peer aggression, and existential anxiety. It was also significantly but negatively correlated with relationship avoidance. Degree of usage of communication technology for interpersonal communication was significantly correlated with peer aggression, relationship anxiety, and existential anxiety. Those with a preoccupied style (high in relationship anxiety, low in relationship avoidance) spent significantly more time using communication technology than those in the dismissive (high in avoidance, low in anxiety), fearful (high in both), and secure (low in both) styles. Further analyses and their implications for adolescent development will be discussed.

DEDICATION

For my loving and persevering mother, who has shown me that you just have to keep going through the good and the bad; if it weren't for your courage and love, I wouldn't have made it this far in life.

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Introduction

Text messaging, e-mail, instant messaging, and social networking sites are changing the way people interact with each other. The popularity of these communication technologies among adolescents in particular has grown exponentially, with little accompanying research to understand their influences on adolescent development (Baker & White, 2010). With the massive expansion of available technology and technology use, it raises the question as to how this popularity of communication technology could influence identity development, interpersonal relationships and psychological adjustment for adolescents.

Identity

The exact definition of identity is argued among scholars within the discipline of developmental psychology, but what is agreed upon is its importance and tendency to form in adolescence and early adulthood. Identity is considered, “a self-structure, an internal self-constructed, dynamic organization of drives, abilities, beliefs, and individual history” says Marcia (1980, p. 159), “the better developed this structure is, the more aware individuals appear to be of their own uniqueness and similarity to others and of their own strengths and weaknesses in making their way in the world”. If a strong sense of personal identity is not developed then the individual is more likely to rely on outside sources to shape their own behavior and this may cause further confusion and psychological adjustment (i.e. somatization, depression and, anxiety).

Identity is not static in the sense that it is exclusive to adolescence, but its importance in adolescence is in regard to pre-adulthood experience and preparation for the tasks of adulthood (Erikson, 1956/2008). According to Marcia (1980), identity is “dynamic” and over time the entire gestalt may shift and change with age and experience. Identity, according to Marcia, neither begins nor ends with adolescence. The importance of it, particularly in late adolescence, is due to the fact that it is the first time that, “physical development, cognitive skills and social expectations coincide to enable young persons to sort through and synthesize their childhood identifications in order to construct a viable pathway toward their adulthood” (Marcia, 1980, p. 160).

Marcia (1966) expanded Erikson’s original concept of identity formation and development by defining it in regard to two processes, identity exploration and identity commitment. Marcia (1966) defined identity exploration as a time of crisis where the identity is not committed and the individual is attempting to establish direction and purpose. Issues such as values, roles, occupation, morality, religious values, and unique organizations are unresolved and the individual continuously attempts to resolve these ideals and issues. Individuals who are not committed in an identity may feel distress and psychological symptom severity.

Identity and concerns such as existential anxiety, or the concern of the individual and their existence, and psychological symptom severity, such as depression and anxiety, are common and have been found to relate to identity problems and distress in late adolescence (Weems, Costa, Dehon, & Berman, 2004). According to Marcia (1966) identity commitment provides the individual with fluidity and stability. Identity commitment involves the resolution

of issues such as those stated above and gives the individual a sense of an affirmed identity which may also help the individual with the necessary tasks of adulthood (Marcia, 1966).

The Technology Age

According to the Computer and Internet Use in the United States special report by the U.S. Department of Commerce (2005), households in the United States with a computer from 1984 to 2003 have risen from 8.2 percent to 61.8 percent. Households with internet access have risen from 18.0 percent in 1997 to 54.7 percent in 2003. With the amount of households having computer and internet access continuously on the rise, so has the amount of adolescents being exposed to internet and virtual based media. Seventy-six percent of children ages 3-17 had a computer in their household in 2003 as compared to only 32 percent in 1993; sixty-one percent of these children had access to a computer at their school in 1993 as compared to 83 percent of the 57 million enrolled children in 2003 who have used a computer while at school (U.S. Department of Commerce, 2005). According to this special report, out of the 61,897 children surveyed, 86.1 percent had used a computer from some location and 56.1 percent used the internet. In 2009, the number of individuals accessing the internet had risen to 68.4 percent of the 61,756 children aged 3-17 surveyed (U.S. Census Bureau, 2010). With technology use and various ways to access communication technology growing, it is important to understand the potential effects of the growth of use of this technology and the formation of an identity in adolescents.

Communication Technology and Identity

Communication technology can both help and hurt the child's attempt to form his or her identity (Osit, 2008). Some investigators have found positive effects of communication technology. For instance, Mikami, Szwed, Allen, Evans, and Hare (2010) reported that youths who had been better adjusted at ages 13–14 years were more likely to be using social networking web pages at ages 20–22 years. On the other hand, several studies have found negative effects. Pierce (2009) found a positive relationship between social anxiety and talking with others online and via text messaging. Shyam and Bhorja (2011) likewise found that internet use has significant adverse effects on social participation and well-being of the users. Punamaki, Wallenius, Holtto, Nygard, and Rimpela (2009) reported that intensive usage of information and communication technology for entertainment was associated with poor relations with both parents and peers. Some of the problems associated with communication technology include an absence of meaningful barriers between impulse and the ability to act on them, issues of privacy with users sharing personal information indiscriminately with friends and strangers alike, and the state of social skills among today's youth, i.e., knowing the difference between how to interact in cyberspace versus real situations (Osit, 2008).

Suler (2010) discussed the "Online Disinhibition Effect" whereby emotional messages can easily be exaggerated and escalated. We cannot see and hear the other person, which deprives us of the visual and auditory cues of facial expression, body language, and voice dynamics that convey emotion and meaning. The inherent ambiguity in this type of communication opens the door to miscommunication and, at times, a lack of civility. There is a

large difference between expressing anger toward a close friend through a text message rather than in person. This buffer may allow individuals to distance themselves from owning and dealing more directly with feelings, and thus might hinder personal growth and development.

While social networking sites like Facebook and Myspace provide vehicles for exploring and constructing personal identities, it also makes it easier to construct false identities, extreme identities, and identities disconnected from reality (Mesch & Talmud, 2010). Young people also routinely post content that they realize is not appropriate for all audiences, especially potential employers (Miller, Parsons, & Lifer, 2010).

Though for many adolescents, these vehicles can help with the difficulties of being lonely or socially anxious when communicating with others. In a sample of 626 students ages 10 to 16 years, it was found that children and adolescents who self-reported being lonely but not socially anxious and those who were both lonely and socially anxious, significantly communicated more online about personal and intimate topics than the those who did not report being lonely. (Bonetti, Campbell, & Gilmore, 2010). According to Bonetti, Campbell, and Gilmore (2010), the adolescents who communicated more online reported feeling more relaxed and reported communicating online to meet people, to belong to a group, and to make up for weaker social skills. This raises questions as to whether such vehicles enhance or hinder the identity formation process.

With the intense growth of social networking media and the overall amount of communication technologies available, it also raises the question as to how much communication technology is too much. Young (1998) found that extensive internet use could

result in problems such as depression, loneliness, low self-esteem, and anxiety as well as physical impairments such as lack of sleep, lack of eating, and limited physical activity. Young (1998) also found that internet users are more likely to spend less time with people and to become more impatient. Schiffrin, Edelman, Falkenstern, and Stewart (2010) found that increased internet usage was associated with decreased well-being. In a sample of 99 undergraduates with a mean age of 19 years, it was found that these, "...individuals perceived computer-mediated communication to be less useful than face-to-face communication" (Schiffrin, et al., 2010).

Extensive internet use could be related to internet-addiction. Young (1998) created a scale called the Internet Addiction Scale (IAS) and found that of 496 responders, 80 % could be considered addicts. Using the Internet Addiction Scale, Kim and colleagues (2006) found of 1,573 Korean high school students ages 15-16, that 37.9 % of the sample was considered to be possible addicts and 1.6 % of the sample to be internet addicts. It was found that the internet addicted group scored significantly higher in depression and suicide-ideation than the non-addicted group. With the internet, web-based technology use and the potential for internet addiction, it is important to assess the potential relationship between identity formation and communication technology use.

Morrill (2010) conducted one of the most direct studies to date on the relationship between identity formation and communication technology. In a sample of 705 college students, ages 18-24, it was found that identity development was related to text messaging. Those rated higher in identity achievement most often texted to share thoughts and feelings

with others. Participants scoring high on identity exploration, but lacking in identity achievement most often used texting as a means to escape and to meet others. Those who scored lowest in identity development tended to use texting as a means to enhance appearance and to meet others.

As modern society has become increasingly more complex and diverse, the transition to adulthood has posed a more formidable challenge, and increasingly many young people are experiencing considerable distress as part of this transition (American Psychiatric Association, 1987; Arnett, 2002; Berman, Montgomery, & Kurtines, 2004). Communication technology may be one contributing factor to an increase in identity disruption and distress, both directly, with the ease with which one can create false identities, extreme identities and identities disconnected from reality; and indirectly by disrupting the quality of social relationships, where identity issues are often worked out (Erikson, 1968; Sullivan, 1953). Relationship disruptions might include using communication technology to avoid dealing directly with others, interference in developing appropriate social skills, and the disinhibition effect described above, whereby people tend to become more impulsive and less modulated in their emotional communication over the internet.

Berman and Wilson (2010) investigated changes in identity development among high school adolescents, in grades 9 – 12. The first data collection wave ($n = 140$) occurred in 2004 and the second wave ($n = 133$) occurred in 2009. Findings suggested that the recent group was significantly less committed in their identity and reported significantly higher rates of identity distress and psychological symptoms (i.e., anxiety, depression, somatization). Among their

conclusions, the authors conjectured that their findings might be due to changes in communication technology which might be affecting peer relationships and subsequently, the identity formation process. However, they did not measure communication technology usage, and as such, were not in a position to evaluate the validity of their conjectures. The purpose of this study was to follow up on the previously mentioned study (Berman & Wilson, 2010), by specifically examining communication technology usage to determine if any of these factors are related to adjustment, identity development, identity distress, relationship anxiety, and relationship avoidance.

Based on the above, it was hypothesized that high school students' use of communication technology would be related to difficulties in identity formation, interpersonal relationship and overall adjustment. More specifically in regard to identity, based on the findings of Morrill (2010), Osit (2008) as well as Mesch and Talmund (2010), it was predicted that communication technology usage would be positively correlated with identity exploration, identity distress, and existential anxiety, and negatively correlated with identity commitment.

In regard to interpersonal relationships, based on the findings of Punamaki and colleagues (2009) as well as Shyam and Bhorja (2011), it was predicted that communication technology usage would be positively correlated with relationship anxiety, relationship avoidance and peer conflict. Lastly in regard to adjustment, based on the findings of Young (1998), Pierce (2008), and Schiffrin and colleagues (2010), it was hypothesized that communication technology usage would predict psychological adjustment (i.e., symptom

severity of anxiety, depression, and somatization) even after controlling for these identity and intimacy variables.

Methodology

Participants

Participants in this study ($N = 268$) were recruited from three public high schools in Central Florida. The sample was 69% female, and 81.9% White, with 7.5% Hispanic, 3% Black, 1.5% Asian, and 5.6% mixed or other. The grade distribution included 30.7% Freshman, 28.5% Sophomores, 34.8% Juniors, and 6.0% Seniors. According to school statistics, approximately 28% of enrolled students from DeLand High School, 17% of students from Seabreeze High School and 8% of students from Edgewood Jr./Sr. High School qualify for free or reduced lunch. The three samples were not significantly different in gender distribution, though DeLand High School's student population consisted of 26% minority enrollment compared to approximately 15-16% minority enrollment from Edgewood Jr./Sr. High School and Seabreeze High School.

Measures

Demographic Questionnaire

A demographic questionnaire, developed for the present study, was used to inquire about age, gender, and ethnicity.

Technology Usage Scale (TUS)

A measure was created for this study which asked participants the degree to which they used various communication technologies such as texting, instant messaging, twitter, and social networking. Two subscales were created by summing responses related to time spent using

communication technologies (TSUCT), and the degree of usage of communication technology for interpersonal communication (DUCTIC). Internal consistency reliability (Cronbach's alpha) for TSUCT was .71 and for DUCTIC was .92.

The Identity Distress Survey (IDS)

The IDS (Berman, Montgomery, & Kurtines, 2004) is a 10 item measure used to assess distress associated with unresolved identity issues (i.e., identity disorder symptoms, the time frame associated with experiencing those symptoms, and the overall impairment of the endorsed symptoms). The survey was originally modeled on the DSM-III and DSM-III-R criteria for Identity Disorder, although it can also be used to assess DSM-IV criteria for Identity Problem. Participants are asked to rate on a 5 point Likert scale (Not at all, Mildly, Moderately, Severely, Very Severely) "To what degree have you recently been upset, distressed, or worried over the following issues in your life:" long-term goals, career choice, friendships, sexual orientation and behavior, religion, values and beliefs, and group loyalties. In addition to asking for a distress rating in each of these seven areas, it also includes an assessment of how long they have been experiencing distress over these issues and to what degree the symptoms are interfering with daily functioning. Internal consistency has been reported as .84 with test-retest reliability of .82, and the survey has demonstrated convergent validity with other measures of identity development. In this study Cronbach's alpha was .69.

Experiences in Close Relationships (ECR)

The ECR (Brennan, Clark, & Shaver, 1998) is a 36-item self-report measure of attachment that uses a 7-point Likert scale ranging from disagree strongly to agree strongly. The ECR has two sub-scales labeled “Model of Self” and “Model of Others” also called “Relationship Anxiety” and “Relationship Avoidance”, respectively. For the Model of Self higher scores indicate more anxiety about rejection by others and feelings of personal unworthiness regarding interpersonal relationships. For the Model of Others higher scores indicate more interpersonal distrust and avoidance of closeness with others. The Relationship Anxiety sub-scale contains items such as the following: “I worry about being abandoned”. The Relationship Avoidance sub-scale contains such items as “I try to avoid getting too close to my partner”. Individuals with high scores on both the anxiety and avoidance subscales are classified as fearful. Individuals with low scores on the anxiety subscale and high scores on the avoidance subscale are classified as dismissive. Individuals with high scores on the anxiety subscale and low scores on the avoidance subscale are classified as preoccupied. Lastly, individuals with low scores on both subscales are classified as secure. Internal consistency and test re-test reliability for its two subscales have been reported at .94 and .90 for avoidance and .91 and .91 for anxiety, respectively (Brennan, et al. 1998; Fraley, Waller, & Brennan, 2000). In this study Cronbach’s alpha was .91 for relationship avoidance and .88 for relationship anxiety.

The Ego Identity Process Questionnaire (EIPQ)

The EIPQ (Balistreri, Busch-Rossnagel, & Geisinger, 1995) was used to identify participants’ identity status. The Ego Identity Process Questionnaire (EIPQ) has two subscales,

identity exploration and identity commitment. Cronbach's alpha for the exploration subscale has been reported to be .86 with a test-retest reliability of .76. Cronbach's alpha for the commitment subscale has been reported to be .80 with a test-retest reliability of .90. Balistreri, et al. used median splits on the two subscales to assign participants into one of four identity statuses as defined by Marcia (1966). Participants with low scores on exploration and commitment are classified as diffused, low in exploration but high in commitment are classified as foreclosed, high in exploration but low in commitment classified as moratorium, and high in both exploration and commitment are classified as achieved. In this study Cronbach's alpha was .71 for exploration and .70 for commitment.

Brief Symptom Inventory – 18 (BSI-18)

BSI-18 (Derogotis, 2000) is a self-report measure that consists of 18-items assessing psychological symptoms and is a briefer version of the Symptom Checklist-90-R (Derigotis, 1994). Items are rated on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*) to reflect the level of distress an individual has experienced by each of the symptoms during the previous week. Designed to be brief and easy to administer, the test measures three primary symptom dimensions (Depression, Anxiety, and Somatization) as well as global severity. The BSI-18 is also designed to provide an overview of a patients symptoms and their intensity at a specific point in time. The global severity index has an internal consistency of .84 for inpatients and .91 in follow-up participants. Cronbach's alpha for the depression, anxiety, and somatization dimensions range from .61-.84. Dimension and global scores from the BSI-18 test correlate highly (i.e., > .90) with analogous scores from the SCL-90-R test based in a large community

population ($N = 1,122$; 605 males and 517 females). In this study, Cronbach's alpha for the global severity index was .91.

Peer Conflict Scale (PCS)

Aggression was measured by the PCS (Marsee & Frick, 2007; Marsee, Weems, & Taylor, 2008). The PCS is a self-report measure of aggression developed to assess four dimensions of aggression (i.e., reactive overt, proactive overt, reactive relational, proactive relational), by including a sufficient number of items ($n=10$) for each dimension, and limiting items to only acts clearly harming another person. Items are rated on a 4-point Likert type scale from 0 ("Not at all true") to 3 ("Definitely true"). A total score combining these subscales can also be calculated. In this study, Cronbach's alpha for total aggression was .92.

Existential Anxiety Questionnaire (EAQ)

Existential anxiety was measured by the EAQ (Weems, Costa, Dehon, & Berman, 2004). The EAQ is a true–false rating scale designed to assess the critical domains and sub-concepts outlined in Tillich's (1952) work. Initial scale development resulted in a 13-item scale with 2 questions for each of the 6 concepts (3 items for "fate"), half are positively worded and half are negatively worded (for "fate" 1 is positively scored, 2 are negatively scored). Example items are "I know that life has meaning", "I never think about emptiness", "I often think about death and this causes me anxiety". Results of reliability analyses in samples of young adults have indicated that the EAQ had adequate internal consistency (coefficient $\alpha = .71$) and a 2-week test–retest

reliability ($r = .72, p < 0.001$) and a factor structure consistent with theory (Weems, et al., 2004).

In this study, the internal consistency reliability (Cronbach's alpha) was calculated as .86.

Procedure

Participants were recruited from classes at three public high schools in Central Florida. Participants were provided with a University of Central Florida IRB approved parent informed consent form approximately one week before the assessment day. Participants were told that the nature of the study was to survey students' beliefs and feelings about their sense of self. All of the students who returned the signed consent form were to participate in the study.

Participants completed a demographic questionnaire, the TUS, EIPQ, IDS, ECR, PCS, EAQ, and BSI-18 in a group classroom setting. Directions were read and assistance was given as needed.

Results

A two by four (gender by grade) Multivariate Analysis of Variance (MANOVA) was conducted with regard to all the psychological variables under study (identity exploration, identity commitment, identity distress, existential anxiety, psychological symptom severity, relationship avoidance, relationship anxiety, and peer conflict). There were no significant main effects for either gender or grade nor was there a significant interaction effect. (See Table 1).

The gender by grade MANOVA was repeated in regard to time spent using communication technologies (TSUCT) and the degree of usage of communication technology for interpersonal communication (DUCTIC). There was no significant difference between males and females in regard to amount of time spent using communication technologies, however, males reported significantly more usage of these technologies for interpersonal communication (Wilks' Lambda = .97; $F(2, 248) = 3.36, p = .036$). There was no significant main effect for grade and no interaction effect. (See Table 2).

Amount of time using communication technology was significantly correlated with psychological symptom severity (i.e. anxiety and depression) ($r = .26, p < .001$), identity distress ($r = .15, p = .014$), peer aggression ($r = .32, p < .001$), and existential anxiety ($r = .17, p = .005$). Amount of time using communication technology was also significantly but negatively correlated with relationship avoidance ($r = -.20, p = .002$). Degree of usage of communication technology for interpersonal communication was significantly correlated with peer aggression ($r = .24, p < .001$), relationship anxiety ($r = .22, p < .001$), and existential anxiety ($r = .18, p = .004$). (See Table 3).

A One-Way ANOVA revealed a significant difference between romantic attachment styles ($F(3, 256) = 5.14, p = .002$). A least squares difference post hoc analysis suggested that those with a preoccupied style (high in relationship anxiety, low in relationship avoidance) spent significantly ($p < .05$) more time using communication technology than those in the dismissive (high in avoidance, low in anxiety), fearful (high in both), and secure (low in both) styles. There were no differences found between identity statuses.

To determine if communication technology would predict psychological symptom severity over and above identity and relationship variables, a Multiple Regression Analysis was conducted with gender and grade entered on step one, identity exploration, identity commitment, identity distress, relationship anxiety, and relationship avoidance entered on step 2, time spent using communication technology and using technology for interpersonal interaction scores entered on step 3, with psychological symptom severity score as the dependent variable. The overall model was significant sample ($R^2 = .37, \text{Adjusted } R^2 = .35, F(9, 246) = 15.97, p < .001$). At step 3, the change in R^2 was significant (change in $F(2, 246) = 8.58, p < .001$; change in $R^2 = .04$) with standardized beta coefficients reaching significance for identity distress ($\beta = .32, t = 5.71, p < .001$), relationship avoidance ($\beta = .25, t = 4.69, p < .001$), relationship anxiety ($\beta = .26, t = 4.60, p < .001$), and time spent using communication technology ($\beta = .24, t = 4.14, p < .001$).

Discussion

With the massive expansion of technology available and the increase of technology use, it raises the question as to how this popularity of use and growth of technology could influence identity development, interpersonal relationships and psychological adjustment for adolescents. This research was conducted to analyze the interaction between communication technologies such as text messaging, email, instant messaging and social networking sites, and their influences on psychosocial development among adolescents.

It was hypothesized that high school students' use of communication technology would be associated with both interpersonal relationship and identity problems. Specifically, it was hypothesized that greater communication technology usage would be correlated with higher levels of both identity exploration and identity distress, as well as lower levels of identity commitment. Although, there were no significant correlations between technology usage and identity exploration or identity commitment, there was a significant correlation between time spent using communication technology and identity distress and existential anxiety as predicted. This suggests that communication technology usage may not be interfering with the identity development process per se, but might be interfering with the anxiety and distress often associated with this process. Further research is needed to replicate these findings and explore them in more depth.

Communication technology usage was also hypothesized to be positively correlated with both relationship anxiety, relationship avoidance and peer aggression. Results suggest that the degree of usage of communication technology for interpersonal communication was

significantly correlated with relationship anxiety and peer aggression as hypothesized, however, counter to prediction, relationship avoidance was *negatively* correlated with amount of time spent using communication technology. Similar to results in regard to identity, it would appear that communication technology is not interfering in development of relationships, but it does seem to be related to a decrease in the quality of peer relationships. Again, further research is needed to replicate these findings and explore them in more depth. Lastly, communication technology usage was hypothesized to predict psychological adjustment (i.e., symptom severity of anxiety, depression, and somatization) even after controlling for identity and intimacy variables. This hypothesis was also confirmed.

Taken together, these results support the notion that communication technology might be increasing psychological maladjustment in general, and specifically in regard to identity formation and relationship quality. However, it could also be that identity and relationship problems affect the quantity and quality of communication technology usage. Further research would be necessary to ascertain the direction of these associations.

In the past 20 years, access to various types of communication technology has grown exponentially with little accompanying research to understand its benefits and consequences. More importantly, with the delicate state of economic affairs, many educational institutions and groups are promoting these communication technologies, such as web-based classrooms, to control spending and to cut costs. This pressure, along with items such as hand-held devices and the influx of individuals with personal computers and web-based devices, has caused use of these technologies to grow at an astonishing rate.

With many young adults having constant and easy access to various forms of communication technology, it is important to understand the potential effects of this usage. Most students have access to items such as a cellphone, a computer, or a tablet; even gaming consoles, e-readers and printers have access to web-based applications and social networking sites such as Facebook or Twitter. This constant and easy access may affect our youth in regards to formation of an identity because of the lack of in-person communication which allows for cues such as facial expressions, tone and prosody of voice as well as immediate reprisal or dismissal to become unavailable. Online or virtual communication allows for misrepresentation and assuming false identities and aggression and often consequences are delayed and sometimes even avoided.

Possible limitations of this research should be noted. A potential effect of long questionnaires is that the participants may become distracted and change the way they answer the questions because of lack of attention and impatience. The respondents may have felt rushed or ran out of time before being able to answer all of the questions or may have answered them too quickly. Students who finished the survey before others may have affected the time spent on questions of students still taking the survey; the students still taking the survey could feel rushed and or pressured to respond more quickly because their peers finished before them.

Another possible limitation within this research is problem of self-report. It is possible that some students may have answered in what they perceive to be a socially desirable manner. Future studies may want to use collateral sources such as teachers, parents, and peer

ratings on some of the dimensions studied in this thesis. Respondents may have also avoided asking questions if they did not understand the question(s) or the directions, thus leading to the potential misconception of a question or response. This could be because peers were present or they may have felt intimidated by the proctor or situation. Using an individual assessment rather than a group classroom situation might help in this regard.

Finally, perhaps the most important limitation, is the cross-sectional and correlational nature of this investigation which precludes making causal assumptions. Although communication technology usage may be interfering with adolescent adjustment, as noted earlier, it is just as plausible that psychological adjustment might affect the quantity and style of communication technology usage. Longitudinal studies could be very informative in this regard.

At the scale of technological growth along with the pressures and normative use of communication technology, effects of these technologies need to be further assessed. Future research should be conducted to replicate the findings of this study and to explore them in more depth in service of promoting positive young adult development and growth.

**Appendix A: MANOVA F Ratios Table for Gender x Grade for all
psychological variables**

Table 1Multivariate and Univariate Analyses of Variance F Ratios for Gender by Grade for Psychological Variables Under Study

Variable	ANOVA								
	MANOVA	Identity Exploration	Identity Commitment	Identity Distress	Existential Anxiety	Psych. Symptom Severity	Relationship Avoidance	Relationship Anxiety	Peer Conflict
	F	F	F	F	F	F	F	F	F
Gender	1.73	3.37	.06	3.48	.06	2.87	4.50*	.19	.36
Grade	1.07	2.23	.11	1.15	.25	.44	.50	2.44	.14
Gender x Grade	1.31	.72	.95	.42	.13	1.19	.82	1.03	1.59

Note. F ratios are Wilks's approximation of F_s . MANOVA = multivariate analysis of variance; ANOVA = univariate analysis of variance;

* $p < .05$.

**Appendix B: MANOVA F Ratios Table for Gender x Grade for Time Spent
Using Communication Technology (TSUCT) and Degree of Usage of
Communication Technology for Interpersonal Communication (DUCTIC)**

Table 2

Multivariate and Univariate Analyses of Variance F Ratios for Gender by Grade for Time Spent Using Communication Technology (TSUCT) and Degree of Usage of Communication Technology for Interpersonal Communication (DUCTIC)

Variable	ANOVA		
	<u>MANOVA</u>	TSUCT	DUCTIC
	<u>F</u>	<u>F</u>	<u>F</u>
Gender	3.36*	.14	5.38*
Grade	.66	.29	1.14
Gender x Grade	1.63	1.83	1.77

Note. F ratios are Wilks's approximation of Fs. MANOVA = multivariate analysis of variance; ANOVA = univariate analysis of variance; * $p < .05$.

Appendix C: Correlation Table

Table 3

Intercorrelations for Amount of Time Spent Using Communication Technology (TSUCT) and Degree of Usage of Communication Technology for Interpersonal Communication (DUCTIC) Measures

Measures	1	2	3	4	5	6	7	8	9	10
1. TSUCT	--									
2. DUCTIC	.30***	--								
3. Identity Exploration	-.07	.06	--							
4. Identity Commitment	.04	-.03	-.26***	--						
5. Identity Distress	.15*	.02	.22***	-.28***	--					
6. Existential Anxiety	.17**	.18**	.11	-.17**	.29***	--				
7. Relationship Anxiety	.11	.22***	.23***	-.21***	.29***	.36***	--			
8. Relationship Avoidance	-.20**	-.06	-.004	-.22***	.11	.09	.003	--		
9. Peer Aggression	.32***	.24***	-.01	-.08	.28***	.40***	.25***	.03	--	
10. Psychological Symptom Severity	.26***	.05	.10	-.13*	.45***	.44***	.36***	.24***	.35***	--

* $p < .05$

** $p < .01$

*** $p < .001$

Appendix D: IRB Approval



University of Central Florida Institutional Review Board
 Office of Research & Commercialization
 12201 Research Parkway, Suite 501
 Orlando, Florida 32826-3246
 Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: **UCF Institutional Review Board #1
 FWA00000351, IRB00001138**

To: **Megan I. Smith**

Date: **May 12, 2011**

Dear Researcher:

On 5/12/2011, the IRB approved the following modifications / human participant research until 12/12/2011 inclusive:

Type of Review: IRB Addendum and Modification Request Form
 Modification Type: An additional research assistant, Betty-Ann Cyr, has been added to the study and an additional collection site, Deland High School, has been added.
 Project Title: Identity Disruption in the New Millennium
 Investigator: Megan I. Smith
 IRB Number: SBE-10-07260
 Funding Agency:
 Grant Title:
 Research ID: N/A

The Continuing Review Application must be submitted 30days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

If continuing review approval is not granted before the expiration date of 12/12/2011, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Kendra Dimond Campbell, MA, JD, UCF IRB Interim Chair, this letter is signed by:

Signature applied by Joanne Muratori on 05/12/2011 10:34:55 AM EDT

Appendix E: Volusia County Approval



Dr. Margaret A. Smith
Superintendent of Schools

P.O. Box 2118
DeLand, Florida 32721

DeLand
(386) 734-7190

Daytona Beach
(386) 255-6475

200 N. Clara Avenue
DeLand, Florida 32720

New Smyrna Beach
(386) 427-5223

Osteen
(386) 860-3322

School Board of Volusia County

Mr. Stan Schmidt, Chairman
Dr. Al Williams, Vice-Chairman
Mrs. Diane Smith
Ms. Judy Conte
Ms. Candace Lankford

March 31, 2011

Ms. Megan Smith
57 Westland Run
Ormond Beach, FL 32174

Dear Ms. Smith:

I have received your request to conduct research within Volusia County Schools. I have approved your topic of "**Identity Disruption in the New Millennium.**" As with all requests to do research; participation is at the sole discretion of the principals, teachers and parents of all students involved. Parent Consent Forms will be necessary for all data gathered from the students of Volusia County Schools. We request that you conduct your survey with as little disruption to the instruction day as possible.

By copy of this letter, you may contact the school principals who allow this research to be conducted with their faculty and students. This consent letter does not permit use of our electronic mail system. For safety issues, discussion with students or parents is not permitted in parent pick up or bus loop area.

I would appreciate receiving a copy of your project at the completion of your study.

Sincerely,

Chris J. Colwell, Deputy Superintendent
Instructional Services

CJC/mh

Appendix F: Brevard County Approval

School Board of Brevard County
2700 Judge Fran Jamieson Way Viera, FL 32940-6699
Dr. Brian Binggeli, Superintendent



March 15, 2011

Dear Ms. Smith:

Thank you for your application to conduct research in the Brevard Public Schools. This letter is official verification that your application has been accepted and approved through the Office of Accountability, Testing, & Evaluation. However, approval from this office does not obligate the principal of the schools you have selected to participate in the proposed research. Please contact the principals of the impacted schools in order to obtain their approval. Upon the completion of your research, submit your findings to our office. If we can be of further assistance, do not hesitate to contact our office.

Sincerely,

Sylvia Mijuskovic

Sylvia Mijuskovic, Resource Teacher
Office of Accountability, Testing, and Evaluation

Office of Accountability, Testing & Evaluation
Phone: (321) 633-1000 FAX: (321) 633-3465

Appendix G: Adult Informed Consent



Identity Disruption in the New Millennium

Informed Consent

Principal Investigator(s): Megan L. Smith, BS, BA

Faculty Supervisor: Steven L. Berman, Ph.D.

Investigational Site(s): Seabreeze High School
Edgewood High School

Introduction: Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being invited to take part in a research study which will include about 200 people from two different high schools in the Central Florida area. You have been asked to take part in this research study because you are a high school student in a psychology or sociology class. You must be 18 years of age or older to be included in the research study.

The person doing this research is Megan Smith of the University of Central Florida Psychology Department. Because the researcher is a graduate student she is being guided by Dr. Steven Berman, a UCF faculty supervisor in Psychology Department.

What you should know about a research study:

- Someone will explain this research study to you.
- A research study is something you volunteer for.
- Whether or not you take part is up to you.
- You should take part in this study only because you want to.
- You can choose not to take part in the research study.
- You can agree to take part now and later change your mind.
- Whatever you decide it will not be held against you.
- Feel free to ask all the questions you want before you decide.

Purpose of the research study: The purpose of this study is to explore the association between young people's sense of self and their interpersonal relationships. The results of the study may be used to help develop intervention programs aimed at helping teenagers who are struggling with identity issues. These results may not directly help you today, but may benefit future students.



What you will be asked to do in the study: You will be asked to complete a survey containing 217 statements (for example, “I have definitely decided on a career”) to which you will respond by rating how much you agree with each statement on a 1 (strongly disagree) to 5 (strongly agree) scale. The survey is anonymous; you will not be asked to write your name on the questionnaires. Results will only be reported in the form of group data. Participation or nonparticipation in this study will not affect your grades or placement in any programs.

Location: The researcher will go to the participant at his or her school.

Time required: The survey will take approximately 40-minutes to complete and will be administered in the classroom.

Risks: There are no expected risks for taking part in this study. There are no reasonably foreseeable risks or discomforts involved in taking part in this study.

Benefits: You will not benefit directly for taking part in this research, besides learning more about how research is conducted.

Compensation or payment: There is no compensation, payment or extra credit for your part in this study.

Confidentiality: We will limit your personal data collected in this study. Efforts will be made to limit your personal information to people who have a need to review this information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the IRB and other representatives of UCF. The survey is anonymous; you will not be asked to write your name on the questionnaires. Results will only be reported in the form of group data.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has hurt your child contact Megan Smith, Graduate Student, Clinical Psychology Program, Megan_Smith@knights.ucf.edu or Dr. Berman, Faculty Supervisor, Psychology Department, at (386) 506-4049 or sberman@mail.ucf.edu.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901. You may also talk to them for any of the following:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You want to get information or provide input about this research.

Appendix H: Parent Informed Consent



Identity Disruption in the New Millennium

Informed Consent

Principal Investigator: Megan L. Smith, BS, BA

Faculty Supervisor: Steven L. Berman, Ph.D.

Investigational Site(s): Seabreeze High School
Edgewood High School

How to Return this Consent Form: Please sign this form and have your child return it if you give permission for your child to participate in this study.

Introduction: Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being asked to allow your child to take part in a research study which will include about 200 people from two different high schools in the Central Florida area. Your child is being invited to take part in this research study because he or she is a high school student in a psychology or sociology class.

The person doing this research is Megan Smith of the University of Central Florida Psychology Department. Because the researcher is a graduate student she is being guided by Dr. Steven Berman, a UCF faculty supervisor in Psychology Department.

What you should know about a research study:

- Someone will explain this research study to you.
- A research study is something you volunteer for.
- Whether or not you take part is up to you.
- You should allow your child to take part in this study only because you want to.
- You can choose not to take part in the research study.
- You can agree to take part now and later change your mind.
- Whatever you decide it will not be held against you or your child.
- Feel free to ask all the questions you want before you decide.

Purpose of the research study: The purpose of this study is to explore the association between young people's sense of self and their interpersonal relationships. The results of the study may be used to help develop intervention programs aimed at helping teenagers who are struggling with identity issues. These results may not directly help your child today, but may benefit future students.

What your child will be asked to do in the study: The participating students will be asked to complete a survey containing 217 statements (for example, "I have definitely decided on a career") to which they will respond by rating how much they agree with each statement on a 1 (strongly disagree) to 5 (strongly agree) scale. The survey is anonymous; students will **not** be asked to write their names on the questionnaires. Results will only be reported in the form of group data. Participation or nonparticipation in this study will not affect the student's grades or placement in any programs.

Permission to Take Part in a Human Research Study

Location: The researcher will go to the participant at his or her school.

Time required: The survey will take approximately 40-minutes to complete and will be administered in the classroom.

Risks: There are no expected risks for taking part in this study. There are no reasonably foreseeable risks or discomforts involved in taking part in this study.

Benefits: Your child will not benefit directly for taking part in this research, besides learning more about how research is conducted.

Compensation or payment: There is no compensation, payment or extra credit for your child's part in this study .

Confidentiality: We will limit the personal data collected in this study. Efforts will be made to limit your child's personal information to people who have a need to review this information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the IRB and other representatives of UCF. The survey is anonymous; students will not be asked to write their names on the questionnaires. Results will only be reported in the form of group data.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has hurt your child contact Megan Smith, Graduate Student, Clinical Psychology Program, Megan_Smith@knights.ucf.edu or Dr. Berman, Faculty Supervisor, Psychology Department, at (386) 506-4049 or sberman@mail.ucf.edu.

IRB contact about you and your child's rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901. You may also talk to them for any of the following:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You want to get information or provide input about this research.

Permission to Take Part in a Human Research Study

Your signature below indicates your permission for the child named below to take part in this research.

DO NOT SIGN THIS FORM AFTER THE IRB EXPIRATION DATE BELOW

<hr/>	
Name of participant	
<hr/>	
Signature of parent or guardian	Date
<hr/>	<hr/>
Printed name of parent or guardian	<input type="checkbox"/> Parent
<hr/>	<input type="checkbox"/> Guardian (See note below)
<hr/>	<hr/>

- Assent
- Obtained
 - Not obtained because:
 - IRB determined that assent of the child was not a requirement
 - The capability of the child is so limited that the child cannot reasonably be consulted.

Note on permission by guardians: An individual may provide permission for a child only if that individual can provide a written document indicating that he or she is legally authorized to consent to the child's general medical care. Attach the documentation to the signed document.

Appendix I: Survey

DO NOT WRITE ON THIS FORM

BACKGROUND QUESTIONNAIRE

Please use the Bubble Sheet provided to fill in your background information as follows.

NAME: Leave blank.

SEX: mark MALE or FEMALE

GRADE: bubble in your grade in school using the following codes:

- (9)=Freshman
- (10)=Sophomore
- (11)=Junior
- (12)=Senior

BIRTH DATE: Mark Month, Day, and Year

IDENTIFICATION NO:

- A In the first column labeled "A", mark the ethnic/racial identifier that best describes you:
- (0)=White, non-Hispanic
 - (1)=Black, non-Hispanic
 - (2)=Hispanic
 - (3)=Asian or Pacific Islander
 - (4)=Native American or Alaskan Native
 - (5)=Mixed ethnicity
 - (6)=Other

Thank you.

Now please turn the bubble sheet over and go on to the next page of this survey.

DO NOT WRITE ON THIS FORM

ECR

The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Please fill in your rating on the Bubble Sheet, using the following rating scale:

1	2	3	4	5
Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Strongly Agree

1. I prefer not to show how I feel deep down.
2. I worry about being abandoned.
3. I am very comfortable being close to romantic partners.
4. I worry a lot about my relationships.
5. Just when my partner starts to get close to me I find myself pulling away.
6. I worry that romantic partners won't care about me as much as I care about them.
7. I get uncomfortable when a romantic partner wants to be very close.
8. I worry a fair amount about losing my partner.
9. I don't feel comfortable opening up to romantic partners.
10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.
11. I want to get close to my partner, but I keep pulling back.
12. I often want to merge completely with romantic partners, and this sometimes scares them away.
13. I am nervous when partners get too close to me.
14. I worry about being alone.
15. I feel comfortable sharing my private thoughts and feelings with my partner.
16. My desire to be very close sometimes scares people away.
17. I try to avoid getting too close to my partner.
18. I need a lot of reassurance that I am loved by my partner.
19. I find it relatively easy to get close to my partner.
20. Sometimes I feel that I force my partners to show more feeling, more commitment.
21. I find it difficult to allow myself to depend on romantic partners.
22. I do not often worry about being abandoned.
23. I prefer not to be too close to romantic partners.
24. If I can't get my partner to show interest in me, I get upset or angry.
25. I tell my partner just about everything.
26. I find that my partner(s) don't want to get as close as I would like.
27. I usually discuss my problems and concerns with my partner.
28. When I'm not involved in a relationship, I feel somewhat anxious and insecure.
29. I feel comfortable depending on romantic partners.
30. I get frustrated when my partner is not around as much as I would like.
31. I don't mind asking romantic partners for comfort, advice, or help.
32. I get frustrated if romantic partners are not available when I need them.
33. It helps to turn to my romantic partner in times of need.
34. When romantic partners disapprove of me, I feel really bad about myself.
35. I turn to my partner for many things, including comfort and reassurance.
36. I resent it when my partner spends time away from me.

EIPQ

For the following statements, please decide how much you agree or disagree with each. Please fill in your rating on the Bubble Sheet, using the following rating scale:

1	2	3	4	5
Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Strongly Agree

37. I have definitely decided on the occupation I want to pursue.
38. I don't expect to change my political principles and ideals.
39. I have considered adopting different kinds of religious beliefs.
40. There has never been a need to question my values.

DO NOT WRITE ON THIS FORM

1	2	3	4	5
Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Strongly Agree

41. I am very confident about which kinds of friends are best for me.
42. My ideas about men's and women's roles have never changed as I became older.
43. I will always vote for the same political party.
44. I have firmly held views concerning my role in my family.
45. I have engaged in several discussions concerning behaviors involved in dating relationships.
46. I have considered different political views thoughtfully.
47. I have never questioned my views concerning what kind of friend is best for me.
48. My values are likely to change in the future.
49. When I talk to people about religion, I make sure to voice my opinion.
50. I am not sure about what type of dating relationship is best for me.
51. I have not felt the need to reflect on the importance I place on my family.
52. Regarding religion, my views are likely to change in the near future.
53. I have definite views regarding the ways in which men and women should behave.
54. I have tried to learn about different occupational fields to find the one best for me.
55. I have undergone several experiences that made me change my views on men's and women's roles.
56. I have re-examined many different values in order to find the ones which are best for me.
57. I think that what I look for in a friend could change in the future.
58. I have questioned what kind of date is right for me.
59. I am unlikely to alter my vocational goals.
60. I have evaluated many ways in which I fit into my family structure.
61. My ideas about men's and women's roles will never change.
62. I have never questioned my political beliefs.
63. I have had many experiences that led me to review the qualities that I would like my friends to have.
64. I have discussed religious matters with a number of people who believe differently than I do.
65. I am not sure that the values I hold are right for me.
66. I have never questioned my occupational aspirations.
67. The extent to which I value my family is likely to change in the future.
68. My beliefs about dating are firmly held.

IDS

To what degree have you recently been upset, distressed, or worried over any of the following issues in your life? Please select the appropriate response using the rating scale below and fill in your rating on the Bubble Sheet.

None at all	Mildly	Moderately	Severely	Very Severely
1	2	3	4	5

69. Long term goals? (e.g., finding a good job, being in a romantic relationship, etc.)
70. Career choice? (e.g., deciding on a trade or profession, etc.)
71. Friendships? (e.g., experiencing a loss of friends, change in friends, etc.)
72. Sexual orientation and behavior? (e.g., feeling confused about sexual preferences, intensity of sexual needs, etc.)
73. Religion? (e.g., stopped believing, changed your belief in God/religion, etc.)
74. Values or beliefs? (e.g., feeling confused about what is right or wrong, etc.)
75. Group loyalties? (e.g., belonging to a club, school group, gang, etc.)
76. Please rate your overall level of *discomfort* (how bad they made you feel) about all the above issues as a whole.
77. Please rate how much uncertainty over these issues as a whole has interfered with your life (for example, stopped you from doing things you wanted to do, or being happy)
78. Using the rating scale below, how long (if at all) have you felt upset, distressed, or worried over these issues as a whole?

Never or less than a month	1 to 3 months	3 to 6 months	6 to 12 months	More than 12 months
1	2	3	4	5

DO NOT WRITE ON THIS FORM

BSI 18

Below is a list of problems people sometimes have. Please read each one carefully and fill in the circle on the Bubble Sheet that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY.

1 **2** **3** **4** **5**
Not at all **A little bit** **Moderately** **Quite a bit** **Extremely**

- 79. Faintness or dizziness
- 80. Feeling no interest in things
- 81. Nervousness or shakiness inside
- 82. Pains in heart or chest
- 83. Feeling lonely
- 84. Feeling tense or keyed up
- 85. Nausea or upset stomach
- 86. Feeling blue
- 87. Suddenly scared for no reason
- 88. Trouble getting your breath
- 89. Feelings of worthlessness
- 90. Spells of terror or panic
- 91. Numbness or tingling in parts of your body
- 92. Feeling hopeless about the future
- 93. Feeling so restless you couldn't sit still
- 94. Feeling weak in parts of your body
- 95. Thoughts of ending your life
- 96. Feeling fearful

EAQ

Please mark "1" for "Yes" or "2" for "No".

1 **2**
Yes **No**

- 97. I often think about death and this causes me anxiety.
- 98. I am not anxious about fate because I am resigned to it.
- 99. I often feel anxious because I am worried that life might have no meaning.
- 100. I am not worried about nor think about being guilty.
- 101. I often feel anxious because of feelings of guilt.
- 102. I often feel anxious because I feel condemned.
- 103. I never think about emptiness.
- 104. I often think that the things that were once important in life are empty.
- 105. I never feel anxious about being condemned.
- 106. I am not anxious about death because I am prepared for whatever it may bring.
- 107. I often think about fate and it causes me to feel anxious.
- 108. I am not anxious about fate because I am sure things will work out.
- 109. I know that life has meaning.

PCS

Please read each statement and decide how well it describes you. Using the following rating scale, please select the appropriate response for each statement and fill in your rating on the Bubble Sheet.

Not at all true	Somewhat true	Very true	Definitely true
1	2	3	4

- 110. I have hurt others to win a game or contest
- 111. I enjoy making fun of others
- 112. When I am teased, I will hurt someone or break something

DO NOT WRITE ON THIS FORM

Not at all true	Somewhat true	Very true	Definitely true
1	2	3	4

113. Sometimes I gossip about others when I'm angry at them
114. I start fights to get what I want
115. I deliberately exclude others from my group, even if they haven't done anything to me
116. I spread rumors and lies about others when they do something wrong to me
117. When someone hurts me, I end up getting into a fight
118. I try to make others look bad to get what I want
119. When someone upsets me, I tell my friends to stop liking that person
120. I threaten others when they do something wrong to me
121. When I hurt others, I feel like it makes me powerful and respected
122. I tell other people's secrets for things they did to me a while back
123. When someone threatens me, I end up getting into a fight
124. I make new friends to get back at someone who has made me angry
125. Sometimes I hurt others when I'm angry at them
126. When others make me mad, I write mean notes about them and pass them around
127. I threaten others to get what I want
128. I gossip about others to become popular
129. If others make me mad, I hurt them
130. I am deliberately cruel to others, even if they haven't done anything to me
131. When I am angry at others, I try to make them look bad
132. To get what I want, I try to steal others' friends from them
133. I carefully plan out how to hurt others
134. When someone makes me mad, I throw things at them
135. When I gossip about others, I feel like it makes me popular
136. I hurt others for things they did to me a while back
137. I enjoy hurting others
138. I spread rumors and lies about others to get what I want
139. Most of the times that I have gotten into arguments or physical fights, I acted without thinking
140. If others make me mad, I tell their secrets
141. I ignore or stop talking to others in order to get them to do what I want
142. I like to hurt kids smaller than me
143. When others make me angry, I try to steal their friends from them
144. I threaten others, even if they haven't done anything to me
145. When I get angry, I will hurt someone
146. I have gotten into fights, even over small insults from others
147. Most of the times that I have started rumors about someone, I acted without thinking
148. I say mean things about others, even if they haven't done anything to me
149. When someone makes me angry, I try to exclude them from my group

Technology Usage

Below is a list of statements regarding the frequency of your technology use. Please mark "1" for "Yes" or "2" for "No".

- | | 1
Yes | | 2
No |
|---|----------|--|---------|
| 150. Do you have a computer in your home? | | | |
| 151. Is your computer a personal computer and not a family computer? | | | |
| 152. Do you have a cell phone? | | | |
| 153. Do you use text messaging? | | | |
| 154. Do you use twitter? | | | |
| 155. Are you a member of a social networking site (e.g. Facebook, MySpace)? | | | |

DO NOT WRITE ON THIS FORM

Below is a list of statements regarding the frequency of your technology use. Read each one carefully and use the rating scale below to select the appropriate response. On the Bubble Sheet, fill in circle that best describes the amount of YOUR USE OF TECHNOLOGY FOR NONACADEMIC PURPOSES DURING THE PAST 7 DAYS INCLUDING TODAY.

1	2	3	4	5
None at all	Less than half an hour per day	Between half an hour and two hours per day	Between two and four hours per day	More than four hours per day

- 156. How much time do you spend on the computer?
- 157. How much time do you spend on social networking sites?
- 158. How much time do you spend using "Instant Message" of some sort?
- 159. How much time do you spend using Vidco Chat (e.g. Skype)?
- 160. How often do you communicate with members of your family via the internet?
- 161. How often do you communicate with your friends via the internet?
- 162. How often do you communicate with members of your family via text message?
- 163. How often do you communicate with your friends via text message?

Below is a list of statements regarding the frequency of your technology use. Please read each one carefully and use the rating scale below to select the appropriate response. On the Bubble Sheet, fill in circle that that best describes the amount of YOUR USE OF TECHNOLOGY DURING THE PAST 7 DAYS INCLUDING TODAY

1	2	3	4	5
Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Strongly Agree

- 164. I spend too much time on the computer.
- 165. I wish I had more time to spend on the computer.
- 166. The amount of time that I spend on the computer interferes with my studies.
- 167. I consider it acceptable to begin a friendship via the internet.
- 168. I prefer to meet people for the first time on the internet rather than face to face.
- 169. I consider it acceptable to end a friendship via the internet.
- 170. I prefer to end a friendship via the internet rather than face to face.
- 171. I consider it acceptable to argue or fight with a friend via the internet.
- 172. I prefer to argue or fight with a friend via the internet rather than in person.
- 173. I consider it acceptable to argue or fight with a family member via the internet.
- 174. I prefer to argue or fight with a family member via the internet rather than in person.
- 175. I consider it acceptable to begin a romantic relationship via the internet.
- 176. I prefer to look for a romantic relationship via the internet rather than face to face.
- 177. I consider it acceptable to end a romantic relationship via the internet.
- 178. I prefer to end a romantic relationship via the internet rather than face to face.
- 179. I consider it acceptable to argue or fight with my girlfriend or boyfriend via the internet.
- 180. I prefer to argue or fight with my girlfriend or boyfriend via the internet rather than in person.
- 181. I consider it acceptable to begin a friendship via text message.
- 182. I consider it acceptable to end a friendship via text message.
- 183. I prefer to end a friendship via text message rather than in person.
- 184. I consider it acceptable to argue or fight with a friend via text message.
- 185. I prefer to argue or fight with a friend via text message rather than in person.
- 186. I consider it acceptable to argue or fight with a family member via text message.
- 187. I prefer to argue or fight with a family member via the text message rather than in person.
- 188. I consider it acceptable to begin a romantic relationship via text message.
- 189. I consider it acceptable to end a romantic relationship via text message.

DO NOT WRITE ON THIS FORM

1	2	3	4	5
Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Strongly Agree

- 190. I prefer to end a romantic relationship via text message rather than face to face.
- 191. I consider it acceptable to argue or fight with my girlfriend or boyfriend via text message.
- 192. I prefer to argue or fight with my girlfriend or boyfriend via text message rather than face to face.
- 193. I consider it acceptable to communicate with some friends only via computer.
- 194. I prefer to communicate with some friends only via computer.

Service, SES Inventory

Please mark "1" for "Yes" or "2" for "No".

1	2
Yes	No

- 195. Does your parent travel for business purposes for extended periods of time?
- 196. Do one or both of your parents or guardians currently serve in the United States Armed Services?
- 197. Has either or both of your parents or guardians ever served in the United States Armed Services?
- 198. Has either or both of your parents or guardians been deployed during the war in Iraq?
- 199. Has either or both of your parents or guardians been deployed during the war in Afghanistan?
- 200. Has either or both of your parents or guardians ever been deployed to another country?
- 201. In the past year, has one or both of your parents or guardians experienced job loss?
- 202. In the past year, has your family had to move due to financial reasons?

Using the rating scale below, respond to each statement by indicating how much you agree or disagree with it. Please read each one carefully and select the appropriate response by filling in the corresponding circle on the Bubble Sheet.

1	2	3	4	5
Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Strongly Agree

- 203. My parent will be sent to war in the next year.
- 204. I will join the Military.
- 205. I support the war in Iraq.
- 206. I support the war in Afghanistan.
- 207. I support the United States Soldiers.
- 208. The United States is in danger of being under terrorist attack.
- 209. I will experience a future terrorist attack on the United States in my lifetime.
- 210. In the past year, my family has experienced financial strain or difficulty.

1	2	3	4	5
Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Strongly Agree

- 211. In the past year, I have stopped participating in extracurricular activities due to family financial reasons.
- 212. In the past year, my family decreased the frequency of family outings (going out to dinner, going to the movies, etc.) due to financial reasons?
- 213. I frequently watch the news.
- 214. I frequently read the newspaper.
- 215. I follow world events closely.
- 216. World events are frequently discussed in my home.
- 217. I frequently discuss world events with my friends.

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