1-1-2011

An examination of the primary and secondary effects of cyber-bullying: development and testing of a cyber-bullying moderator/mediator model

Crystal Lin Johnson
Wayne State University,

AN EXAMINATION OF THE PRIMARY AND SECONDARY EFFECTS OF CYBER-BULLYING: DEVELOPMENT AND TESTING OF A CYBER-BULLYING MODERATOR/MEDIATOR MODEL

by

CRYSTAL LIN JOHNSON

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2011

MAJOR: COMMUNICATION STUDIES

Approved by:

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Advisor **Date**

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DEDICATION

I dedicate this work to my children - Cory, Brooke, Blake, and Abby. God has blessed me with the awesome responsibility of caring for you and setting an example for you. I pray that you can look at the things God has allowed me to accomplish and believe that there is nothing you can't do without God's blessing and determination. *"'I know the plans I have for you,' declares the Lord, 'plans to prosper you and not to harm you, plans to give you hope and a future'" (Jeremiah 29:11).* Love God with all your heart, let Him lead and guide you and He will take you on an amazing journey. Always remember, Jesus loves you and so do I!

ACKNOWLEDGEMENTS

There are many people to thank for their support in the completion of this tremendous project. First, I must thank God for opening doors of opportunity in my life, giving me the strength and tenacity to run through them, and blessing me so greatly with focus, a strong spirit, and people that love, care for, and have supported me.

Next I want to thank my children, Cory, Brooke, Blake, and Abby for being proud of me and telling me so. Thank you to my mother, Charlotte who has spent so much time helping me with my children and running errands and always there to help no matter what it is I need. Thank you to my family, Aunt Linda, Uncle Dale, Steve, Lisa and my best friend Jonene for helping me emotionally get through the last leg of this journey and for all your prayers and support. I love you all.

My deepest heartfelt respect, gratitude, and appreciation goes out to Dr. Terry Kinney, my graduate advisor. Thank you SO much for the countless hours you have spent dedicated to helping me complete this project. You have been my right arm through this entire process and the best email smiley provider when I was frustrated and needed extra encouragement and guidance.

Thank you to my committee members, Dr. Katheryn Maguire, Dr. Hayg Oshagan, and Dr. Elizabeth Barton for being willing to help me with this project and for being so incredibly supportive and friendly throughout the process, especially during the very stressful time of my prospectus defense! Thank you to Dr. Sandy Pensoneau-Conway for so much encouragement, a positive attitude, and for your help throughout my life as a graduate teaching assistant and through the qualifying exams. I also want to thank Angela, Mary, and Dr. Loraleigh Keashly for

always being so helpful and willing to jump in when I couldn't figure out how to navigate the red tape of graduate school.

Finally, thank you to everyone who has encouraged me, said a kind word, or guided me along my academic journey. Thank you Dr. Gary Evans, Dr. Chris Foreman, Dr. Dennis Patrick, Dr. Kathleen Stacey, and Dennis Beagan.

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CHAPTER I

Introduction

Human development can be viewed as a continuous process that occurs over the course of an individual's life span (Feldman, 2006). Erikson (1963) describes eight stages individuals pass through from infancy to adulthood where each stage builds on the successful completion of the prior stage. According to Erikson, there are life challenges that occur within each stage. If the challenges of each stage are not handled appropriately, problems may occur in the future.

For example, adolescence, which has been conceptualized in terms of identity versus role confusion (Erikson, 1963), is a time of growth, development, and change. This stage may begin at age 13 but may not be completed by an individual as late as after college completion (Marcia, 1968). As adolescents seek to discover and establish themselves, they are met with many challenges. Among these challenges are identity issues, sexual concerns, peer pressures, friendship issues, drastic physical changes, college decisions, and transitioning into greater independence (Erikson; Gladding, 2008; Kidwell, Dunham, Bacho, Pastorino, & Portes, 1995). According to Erikson, these challenges may cause upheaval and a disruption in identity formation during adolescence and lasting into young adulthood.

The term "young adult" has been used to define a person who is in the stage of early adulthood, conceptualized as intimacy versus isolation (Erikson, 1968). This stage may begin around age 18, and may reach completion around age 35 (Erikson). According to Erikson, it is during this stage that individuals seek to attain relationships and love. It is further noted by Erikson that if an individual is unsuccessful at achieving meaningful relationships with others, isolation may occur, thereby leading to other developmental challenges. Based on Erikson's

theory of developmental stages, obstacles that prevent an individual from successfully navigating the young adult stage may create difficulties in later stages of development.

One obstacle that may affect one or more of these already difficult times of transitioning from adolescence to adulthood can include being exposed to social aggression such as bullying. The National Institute of Child Health and Human Development conducted the largest national study on bullying in the United States and found that of the 15,686 students in 6th through 10th grades who reported their bullying experiences, 26.9% of 6th grade students, 26.9% of 7th grade students, 25.4% of 8th grade students and 20.4% of 10th grade students reported having been bullied.

Although research on bullying among young adults is limited, Chapell et al. (2004) surveyed 1,025 college undergraduates and found that 18.5% of those sampled had been bullied by another student once or twice. In addition, it has been found that workplace bullying is also a point of concern (Cooper, Einarson, Hoel, & Zapf, 2003; Vartia, 2001). Vartia (2001) surveyed 949 adult workers with a mean age of 40 and found that ten percent had been targets of workplace bullying. This continuation of bullying through an individual's developmental stages suggests that bullying is not an age-isolated form of social aggression. Due to the blending of adolescence and young adult stages during the college years, the present study will examine bullying from the recollections of college students who are in the late adolescence and young adult stages.

Various forms of social aggression have been linked to social anxiety (Erath, Flanagan, & Bierman, 2007) and maladjustment, which may result in serious problems for adolescents (Achenbach & Edelbrock, 1983) and young adults (Strom & Strom, 2005). These problems can include: peer rejection (Light & Dishion, 2007); the internalization (i.e., anxiety) or

externalization (i.e., shootings) of problems (Berger, 2007; Hawker & Boulton, 2000; Vartia, 2001); loneliness and depression (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Dill, Vernberg, Fonagy, Twemlow, & Gamm, 2004; Kochenderfer-Ladd & Ladd, 2001; Lopez & DuBois, 2005); and Post-Traumatic Stress Disorder (Montgomery, 1994).

Underwood (2003) defines social aggression as direct or indirect behaviors that involve manipulating relationships, spreading rumors, and/or social exclusion with the intent to hurt others by harming or destroying their social relationships, peer status, and friendships (Crick, 1996; Crick & Grotpeter, 1995). Much research has been done on social aggression (Camodeca & Goossens, 2005; Coie & Dodge, 1988; Dodge & Crick, 1990; Galen & Underwood, 1997; Harre & Lamb, 1993; Underwood, Galen, & Paquette, 2001), which can manifest itself in either an overt (bully is known) or covert (bully is anonymous) manner (Galen & Underwood, 1997; Loukas, Paulos, & Robinson, 2005). However, there is a commonality between both forms of social aggression which is that they are both intended to harm the victim (Paulos, 2007).

Since the 1983 suicides of two Norwegian boys, ages 10 to 14 after being bullied by their peers, much attention has been given to the topic of bullying e.g., (Berger, 2007; Espelage & Swearer, 2003; Georgiou, 2008; Olweus, 1991). Specifically, researchers have focused on the negative effects of face-to-face bullying (Achenbach & Edelbrock, 1983; Coolidge, DenBoer, & Segal, 2004; Crick & Grotpeter, 1995; Nansel et al., 2001; Olweus, 2005). One report provided by the U.S. Secret Service found after interviewing friends, family, and neighbors of 41 school shooters that 71% of the shooters had been the target of a bully (Vossekuil, Fein, Reddy, Borum, & Modzeleski, 2002). This correspondence suggests that being the victim of a bully may hold significant psychological and social effects that motivate individuals to hurt themselves and others.

More recently, the highly publicized case of Phoebe Prince has sparked a tremendous interest in bullying and the effects it has on its victims. Phoebe Prince, a 15-year old freshman at South Hadley High School in western Massachusetts hanged herself in the stairwell of her home in January of 2010 after being taunted and physically bullied by classmates (*NY Times*, 2010). Prince had moved from a small town in Ireland to the United States with her family in the fall of 2009. After starting a brief relationship with a senior boy who was noted as popular, some other students began calling her derogatory names, knocking books out of her hands, and throwing soda cans at her on her walk home. After enduring several months of bullying and harassment, and after receiving no help from adults, Phoebe committed suicide.

Social aggression also includes cyber-bullying. While most of the harassment Prince experienced occurred at school in a physical manner, it is reported that she also received threats via text messages and social networking sites (*NY Times*, 2010). Internet Harassment (Beran & Li, 2005) also known as cyber-bullying is considered a more anonymous method to harass others.

Belsey (2004) defines cyber-bullying as:

> [the] use of information and communication technologies such as e-mails, cell phone and pager text messages, instant messaging, defamatory personal Web sites, and defamatory online personal polling Web sites, to support deliberate, repeated, and hostile behavior by an individual or group, that is intended to harm others. (p. 8)

Thus, cyber-bullying shows much in common with traditional face-to-face bullying, but the differences warrant a closer examination of its nature, dynamics and consequences.

Manifestation of Cyber-bullying

Adolescence and young adulthood are stages in which individuals are highly susceptible to social aggression due to the high level of importance that is placed on friendships and support from peer groups (Espelage & Swearer, 2003; Kupersmidt & Coie, 1990; Paulos, 2007) as well as the importance of intimate relationships and love (Goldstein, Chesir-Teran, & McFaul, 2008). Relationships during the adolescent years tend to involve increased self-disclosure, which creates a vulnerability that may be used by bullies (Parker, Rubin, Price, & DeRosier, 1995). Patterns of interaction that occur during young adulthood may serve to form future relationship patterns (Goldstein, Chesir-Tera, & McFaul, 2007). Rejection from peers can be extremely difficult for adolescents (Paulos, 2007). Cliques are also more prominent during adolescence (Prinstein, Boergers, & Vernberg, 2001) and socially aggressive behaviors may inhibit healthy adjustment through exclusion, ostracism, or defamation of character (Cairns, Cairns, & Neckerman, 1989).

With the proliferation of computer technology, such as the internet, email, social networking sites, and the increase of cell phone use, anecdotal evidence suggests that cyber-bullying is becoming a societal (and global) problem. In a study conducted on cyber-bullying, Ybarra and Mitchell (2004) surveyed 1,501 individuals between the ages of 10 and 17 and found that 19% were involved in cyber-bullying either as a bully or a victim.

The following account from this researcher's 13-year old daughter provides one personal example of cyber-bullying involving cell phone text messages:

Recently, a small group of female 8th grade students, forwarded a text message regarding a classmate to everyone in their cell phone contact list that said, "Shelby is a lesbian." Those students subsequently forwarded it to all of their friends until the majority of the junior high school was informed. The school was notified of the text message and held an assembly

regarding this issue. The principal described the details surrounding the death of Megan Meier, a 13-year old girl from Missouri who committed suicide after being the victim of harassing derogatory statements via a *MySpace* website. The principal attempted to convey the gravity of such behavior and explained that cyber-bullying would not be tolerated. While the identities of the bullies were not uncovered, the police are currently investigating the incident. When asked about the incident, Shelby's peers stated, "she was kinda upset about it" (B. Johnson, personal communication, February 9, 2009).

Such bold behavior between adolescents and parents was displayed on another occasion when a group of 8th grade students phoned the parent of another girl, pretending to be from a local Planned Parenthood organization congratulating her on the eminent birth of twins and mentioned the girl's 14 year old boyfriend as the father. In yet another socio-drama, a female adolescent who suspected her boyfriend liked another classmate, sent a text message to the other female classmate pretending to be her boyfriend. She sent messages such as: "do you like me?" "what do you think of Karen?" and "do you want to go out sometime?" (B. Johnson, personal communication, February 9, 2009).

While cyber-bullying may seem to be perpetuated predominantly by females, males can also involve themselves in cyber-bullying. Camera phones have been used by both males and females to take compromising photos of peers and distribute them to large numbers of students, thereby potentially increasing the emotional distress of the target. In one instance, a boy in the 8th grade obtained a photo of a female classmate in the department store dressing room with his cell phone camera and threatened to "expose" her to the school. Another incident involved both male and female adolescent students drawing an obscene picture of a couple that attended school, took

a picture of it with their camera phone and forwarded it to other students in the school (B. Johnson, personal communication, February 9, 2009).

Young adults have experienced similar situations involving cyber-bullying. A 30-year old woman who had posted a positive personal work-related success story on her employment website received a barrage of anonymous harassing comments. The comments included personal and private derogatory statements about her as well as her family. The incident became such a problem that the employer eventually deleted the entire post. However, this was after it had been estimated that hundreds of other people, including the woman's co-workers, friends, and family members read the negative comments. She explained, "I was so emotionally overwhelmed and depressed, I couldn't eat or sleep" (Anonymous, personal communication, May 10, 2010).

When individuals are the target of anonymous cyber-bullying, they do not know who to trust, thereby adding to the emotional stress of the situation (Willard, 2007). Photos and personal information shared in private can become public knowledge with the click of a button. Cell phone and text message cyber-bullying have been found to be the most prevalent (Smith et al., 2008). However, cellular video clip cyber-bullying has been perceived to have a more negative impact than cell phone and text message cyber-bullying (Smith et al.).

Karhunen (2009) points out that face-to-face bullying may be considered "a way to spend time or amuse oneself or others" (p. 31). This appears to hold true for cyber-bullying as well. Willard (2007) explains that cyber-bullying is becoming an "entertainment activity" (p. 47) among adolescents. This may, in part, be perpetuated by the recent movies that have glamorized and popularized the cyber-bullying trend in some respects. A made for television movie titled, *Picture This* starring Ashley Tisdale and Kevin Pollack, shows scenes in which inappropriate photos of a girl bending over are forwarded to other students. One scene in particular shows the

reactions of the teens and their quick response without any thought to forward it on to their friends. Another scene shows a jealous teenage girl forwarding a picture of another girl hugging her boyfriend to that girl's father. Finally, the same jealous girl called the other girl's father and told him that she was supposed to provide the beer, thus creating problems for the girl at home.

Likewise, the movie *Mean Girls* starring Lindsey Lohen, which is based on the book *Queen Bees and Wannabees* (Rosalind, 2002), addresses the cruel behavior popular students can inflict on others. In the movie, a popular female bully spreads rumors of promiscuity in order to harm an 8th grade girl's reputation. In one scene a student describes the popular girl, "She may seem like your typical selfish, back-stabbing slut faced ho-bag, but in reality, she's so much more than that. She's the queen bee - the star, those other two are just her little workers" (see *http://www.IMDB.com).* Although the target of the bullying behavior in this movie gets revenge and all ends well, in reality this is not typically the case, such as the case of Phoebe Prince.

While the advancements in cellular technology and the Internet have many positive social aspects for adolescents and young adults, due to the potential of the detached nature of the aggression, these forms of technology can provide anonymity and a decreased level of regret, sympathy, or compassion toward the victim (Strom & Strom, 2005).

The proliferation of technology has created a new avenue for bullies. While incidents of cyber-bullying are most frequent during early adolescence, it has been shown that late adolescence and young adults are also being targeted for bullying (Chapell et al., 2004). This indicates that cyber-bullying may add stress to an already stressful time of life. Due to the limited amount of research in this area, cyber-bullying may harm adolescents and young adults in ways that have not been explored. In order to unpack the concept of cyber-bullying and attempt to understand the effects cyber-bullying has on adolescents and young adults, it is

important to understand how cyber-bullying manifests and to what extent it manifests. Therefore the following question will guide this study:

1. **How does cyber-bullying manifest and to what extent does it manifest?**

Comparison of Cyber-bullying and Face-to-Face Bullying

The primary difference between face-to-face bullying and cyber-bullying is the medium through which the bullying occurs. However, research has also indicated other notable differences as well. Cyber-bullying may be more emotionally damaging than face-to-face bullying (Raskauskas & Stoltz, 2007; Willard, 2007). Cyber-bullying is becoming socially acceptable as a means of entertainment (Joinson, 1986; Smith et al., 2008) and can occur around the clock (Patchin & Hinduja, 2006) as well as provide anonymity for the bully (Slonje & Smith, 2008). Smith et al. (2008) concluded that, "cyber-bullying is an important new kind of bullying, with some different characteristics from face-to-face bullying" (p. 376).

Another difference found in the literature within each category of face-to-face bullying and cyber-bullying is the direct or indirect nature of the bullying. Ortega, Elipe, Mora-Merchan, Calmaestra, and Vega (2009) break face-to-face bullying down into direct (physical or verbal) and indirect (threats, insults, isolation, destruction or theft of belongings). Although Ortega et al's study examines both face-to-face bullying and cyber-bullying, these researchers do not categorize cyber-bullying as either a direct or indirect form of bullying. This would suggest that more research is needed in order to help categorize cyber-bullying across the discipline.

While there are important differences between face-to-face bullying and cyber-bullying, the present study considers some researchers suggestions that cyber-bullying and face-to-face bullying have similar qualities as well (Dooley, Pyzalski, & Cross, 2009; Raskauskas & Stoltz,

2007). Li (2005) claims that cyber-bullying may still be placed into a broader category with a social form of face-to-face bullying (i.e., gossip and slander). This suggests that further research is needed in order to set cyber-bullying apart as its own category of social aggression and not simply place it in a sub-category of face-to-face bullying.

While Li (2005) states that cyber-bullying should be merely a sub-category of bullying, Smith et al. (2008) conclude, "it is important to include cyber-bullying in current questionnaire and nomination instruments; and to consider different varieties of cyber-bullying, rather than taking them as a global phenomenon" (p. 31). Beran and Li (2005) state, "researchers have yet to examine systematically the nature of cyber-bullying" (p. 266). Lacey (2007) investigated internet cyber-bullying from the viewpoint of adolescents from 11-15 and suggested that further research is needed to explain how Internet harassment impacts adolescents both socially as well as academically. Thus, these positions suggest that cyber-bullying is a unique social phenomenon that warrants examination to understand its nature and consequences. Not only is further research in general necessary, further research in America is needed. While Turkish adolescents have been studied with regard to their coping strategies when cyber-bullied by peers (Aricak et al., 2008), little research has focused on the effects of cyber-bullying on American adolescents. Even less attention has been given to the effects of cyber-bullying on college-aged adolescents and young adults. Strom and Strom (2005) state, "cyber-bullying is of such recent origin that current understanding is limited" (p. 41).

Ortega et al. (2009) compared the emotional profiles of victims of face-to-face bullying and cyber-bullying and found that face-to-face bullying "produced a wide variety of impacts, with the victims being divided into five different emotional categories" (p. 197). Ortega et al. also found that both indirect bullying (threats, insults, isolation, destruction, and theft of

belongings) and cyber-bullying "presented a narrower variety of results with the victims being classifiable into just two groups" (p. 197). These results from Ortega et al. might suggest that cyber-bullying creates a more simple emotional response than face-to-face bullying, which is reported to have produced a variety of emotional responses, thereby leading one to presume cyber-bullying is not more damaging than face-to-face bullying.

A factor that is important to consider when considering whether cyber-bullying is the same as face-to-face bullying, is that Ortega et al. (2009) places physical bullying in the direct category, while placing verbal bullying in the indirect category. This suggests that the physical element of bullying, when compared to verbal bullying (e.g., threats, insults, isolation) increases one's propensity for emotional volatility. Morgan and Wilson (2005) explain that "nonphysical outcomes may be more damaging in the long term than the physical injuries sustained; it is the meaning of physical abuse that haunts victims" (p. 2). Therefore, because research has supported cyber-bullying as a separate type of bullying that warrants its own category and due to the potential of cyber-bullying being more damaging, the present study will focus on cyber-bullying.

Evaluation of Bullying

Through the lens of the Social Information Processing model (Crick & Dodge, 1994; Dodge & Coie, 1987), individuals understand how they fit into groups by paying attention to what others say about them. If comments received are negative, this can lead to a discrepancy of how one views the self. Self-Discrepancy theory (Higgins, 1987), proposes that social transgressions such as bullying activate a comparative evaluation with one's self-guides which creates internal discrepancy, leading to potential emotional trauma such as depression, anxiety, or in extreme cases, suicide (Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Riittakerttu, 1999), otherwise identified as "bullycide" (Marr & Field, 2001). Research has

shown that as the level or extremeness of the self-discrepancy increases, the level of emotional distress increases as well (Higgins, 1987). Biocca, Burgoon, Harms, & Stoner (2003) explain that social presence, or the degree of closeness individuals perceive to exist in mediated communication, may "extend the senses" (p. 7), and heighten emotions.

As stated previously, some research has indicated cyber-bullying is more emotionally damaging than face-to-face bullying (Raskauskas & Stoltz, 2007; Willard, 2007), suggesting that cyber-bullying creates a greater self-discrepancy than face-to-face bullying. While researchers have been studying the effects of face-to-face bullying for years (Juvonen, 2000; Swearer, Song, Cary, Eagle, & Mickelson, 2001), cyber-bullying is a new phenomenon with notable differences.

Therefore, it is important to understand better the effects of cyber-bullying. Thus the following question will guide this study:

2. How does cyber-bullying affect adolescents and young adults?

Primary Effects of Cyber-bullying

Cyber-bullying messages demand the attention of the target. In order to process these messages, an individual must appraise the message, and then access a mental representation of a similar past event in order to determine an appropriate response. In addition, if these messages are inconsistent with the target's own self view, a discrepancy may occur that creates negative secondary effects.

Although limited research has shown that cyber-bullying does have a negative impact on adolescents and young adults, researchers have not extensively studied the primary effects of cyber-bullying. Therefore, it is important to expand this area of research by examining both the primary as well as the secondary effects cyber-bullying has on adolescents and young adults.

Specifically, this study will examine the appraisals, mental representations, and self-discrepancy one may experience shortly after exposure to the potentially harmful message. Therefore, the following question will guide this study:

3. **What are the primary effects of cyber-bullying?**

Secondary Effects of Cyber-bullying

When faced with cyber-bullying, Aricak et al. (2008) found that the coping strategies of adolescents included more externally focused strategies such as: 25% telling someone, such as a parent, teacher, or peer; or 30.6% finding active solutions or blocking the bully. Sharing disturbing events, such as being bullied can be beneficial to the target. According to Porhola (2009), "having pro-social peer relationships with some classmates moderates the relationship between peer victimization and loneliness felt by the victim of bullying" (p. 88). However, many people are highly reluctant to report their experiences of harassment (Oliver, 2004). Thus, many victims may internalize the abuse and not seek help (Cowie, Naylor, Talamelli, Smith, & Chauhan, 2002; Naylor, Cowie, & del Rey, 2001). Smith and Shu (2000) reported that 30% of bullied students told no one.

Such internally focused methods of dealing with cyber-bullying may result in cognitive distancing which manifests itself as denial in the victim, refusal to think about the incident, or self-directed anger believing to have perpetuated or deserved the abuse in some way, which subsequently leads to anxiety (Crick & Bigbee, 1998), depression (Hawker & Boulton, 2000), or outward acts of violence (Willard, 2007). In addition, adolescents who are victims of cyber-bullying and internalize the problem may be at risk for increased loneliness, peer rejection, and social difficulties (Kochenderfer-Ladd & Skinner, 2002).

Individuals who receive negative messages from peers, such as the types of messages contained in a cyber-bullying act, may sustain harm to their personal identity (Gavazzi, Anderson, & Sabatelli, 1993; Hightower, 1990), lowering self-esteem (Austin & Joseph, 1996; Egan & Perry, 1998; Salmivalli, Kaukiainen, Kaistaniemi, & Lagerspetz, 1999), and lower self-worth (Callaghan & Joseph, 1994).

Although limited research has shown that cyber-bullying does have a negative impact on adolescents and young adults, researchers have not extensively studied the secondary effects of cyber-bullying. Therefore, it is important to expand this area of research by examining both the primary as well as the secondary effects cyber-bullying has on adolescents and young adults. Specifically, this study will examine the possible emotional (anxiety and depression), social (peer rejection and loneliness), and academic (attendance and grades) effects cyber-bullying has on adolescents and young adults. Therefore, the following question will guide this study:

4. **What are the secondary effects of cyber-bullying?**

The following literature review begins with an overview of the developmental stages of adolescence and young adulthood, followed by a brief history of social aggression and face-to-face bullying. A description of the technology used by adolescents is subsequently explored, which leads to a review of the literature surrounding the phenomenon of cyber-bullying and its effects. These effects may include possible emotional risks to self, to academic achievement and advancement, and to social relationships. As shown in Figure 1, exposure to a cyber-bullying message may activate such moderators as: biological sex, attachment style, and being a bully, all of which are discussed. The Social Information Processing model (Dodge & Coie, 1987), appraisals, mental representations, and Higgins' (1987, 1989) Self-Discrepancy theory are

discussed as the theoretical lenses through which the effects of cyber-bullying are framed and examined. Finally, the Cyber-Bullying Moderator/Mediator model (see Figure 1) designed for this study will be discussed and tested for its heuristic, theoretical, and practical value in terms of being able to model the psychological process that individuals move through when exposed to a

cyber-bullying message, and in terms of its ability to account for the outcomes of cyber-bullying (emotional, academic, and social).

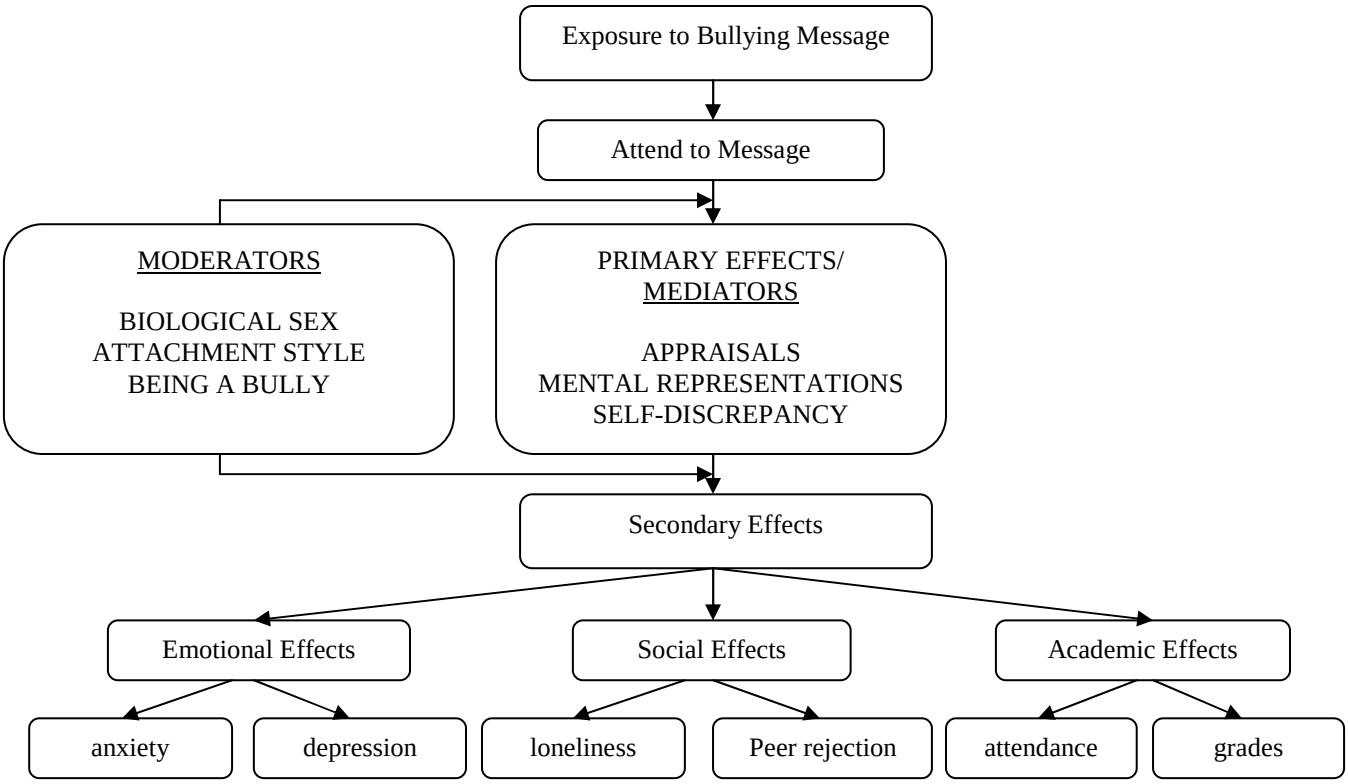

Figure 1. Moderator/Mediator model explaining the psychological process prompted by a cyber-bullying message

Rationale

Times are changing, technology is changing, and the social phenomenon of bullying is changing. However, research, prevention and intervention programs, attitudes, and social health policies have not changed at the same pace. Based on a history of research that has shown the negative effects face-to-face bullying has on adolescents and young adults (Crick & Bigbee, 1998; Crick et al., 2008; Grotpeter, 1995; Nansel et al., 2001; Prinstein, Boergers, & Vernberg,

2001; Storch, Nock, Masia-Warner, & Barlas, 2003), this study examines the effects cyber-bullying has on adolescents and young adults.

It is noted by Weatherbee and Kelloway (2006) that when technology is used to mediate acts of hostility or aggression, "the potential for severity in degree of adverse impact at the individual, group, organizational, and public levels is much greater than for other more conventional forms" (p. 449). Therefore it is important to understand how adolescents and young adults use various communication technologies to engage as well as disengage with others in a variety of social situations (Kinney & Porhola, 2009). Through a better understanding of the effects cyber-bullying has on adolescents and young adults, policy makers, mental health care professionals, and parents may be able to design programs to prevent, minimize, and protect individuals from the effects of various social violations such as social aggression and bullying.

CHAPTER II

Review of Literature

This chapter provides an overview of research conducted on social aggression, focusing on a new form of bullying, cyber-bullying. Due to the increasing popularity of using the Internet and cell phones, an understanding of this particular type of social aggression is important. Therefore definitions, population considerations, sex differences, psychosocial factors, and socially disruptive behaviors in relation to social aggression are discussed. Research on cognitive theories surrounding social aggression, with a focused discussion on Social Information Processing theory (Dodge & Coie, 1986) and Self-Discrepancy theory (Higgins, 1987) are reviewed.

Human Development

There have been various theories presented that examine, discuss, test, and define the stages of human development. These have included: Freud's (1962) theory of psychosexual development; Piaget's (1955) theory of cognitive development; and Erikson's (1968) theory of development. The present study looks at development from Erikson's (1968) perspective given that his psychosocial theory of development takes into consideration how external factors, such as society, peers, and parents, affect development from childhood through adulthood, or the achievement of identity. For the purposes of this study, it is important to note that James Marcia (1967) extended Erikson's theory of development by suggesting that adolescence is not defined by a number, but the achievement of identity. Marcia argues that many adolescents do not achieve identity until after college. In fact, it may be that up to 30% of college students are still in the stage of seeking identity, a stage defined by Erikson as adolescence.

Adolescence. The term adolescence, originated by G. Stanley Hall (1904), has been referred to as a time of storm and stress. While many teenagers move through this period of time relatively unscathed, moving on to young adulthood and developing healthy identities and forming secure relationships, some are met with seemingly insurmountable difficulties that can throw an ill-equipped adolescent off course and create problems into adulthood.

Many of the difficulties adolescents face include the development and maintenance of self-esteem, career choices, and societal and peer pressures (Kidwell et al., 1995). In fact, there may never be another time in life when peers are as important as during adolescence (Loukas et al., 2005; Youniss & Haynie, 1992). During this period, adolescents begin to shift their focus from family to peers (Feldman, 2006). Peer groups can provide a sense of belonging, support, relief from both internal and external pressures, hope, and models for change (Malekoff, 1997). Peers may also be a source of information since peers tend to share their own experiences (Rankin, Lane, & Gibbons, 2004). Although there are tremendous benefits to interacting with peers, there are many challenges as well.

Adolescent aggression is one challenge that has gained the attention of researchers over the past few decades. For example, researchers have examined popularity and aggression among adolescents (Cillessen & Mayeux, 2004; Coie & Dodge, 1988; Dodge et al., 1990; Prinstein & Cillessen, 2003), social aggression and the effects of social anxiety (Loukas et al., 2005), and dominance and aggression among adolescents (Pellegrini & Bartini, 2001; Pellegrini & Long, 2004).

Another challenge described by Erikson (1963) is the search for personal identity. According to Erikson, during adolescence, individuals try to develop a personal sense of identity. They develop their own perceptions of personal strengths and weaknesses. This stage is known

as the identity-maturity-versus-identity-confusion stage. If adolescents encounter negative messages that inhibit their growth toward identity maturity, several socially unacceptable problems may occur. These problems may include a failure to develop healthy relationships or adopting socially unacceptable ways of expressing who or what they do *not* want to be (Feldman, 2006).

It is during this time that adolescents also diverge from the self and parent only perspectives and develop the capacity for multiple perspectives on the self (Moretti, 1999). Peer relationships are critical to social as well as emotional development in adolescents (Espelage & Swearer, 2003; Kupersmidt & Coie, 1990). In order to form a positive personal identity as well as a healthy sense of self, peer relationships must be perceived as positive (Gavazzi et al., 1993; Hightower, 1990).

It is also during this time however, that regardless of the positive messages received, adolescents may focus on contradictory rather than complimentary viewpoints regarding the self (Moretti, 1999). Thus, forms of social aggression, such as bullying and cyber-bullying can threaten peer relationships and social standing, potentially harming and/or stunting an adolescent's healthy development of the self (Crick et al., 2001; Espelage & Swearer, 2003) and creating problems in the future as a young adult. These problems can include such things as depression, unstable relationships, and adjustment difficulties (Strom & Strom, 2005).

Young adulthood. There have been fewer studies done on young adults and bullying than adolescents and bullying. However, while it may be reported frequently that adolescents may experience negative effects from socially aggressive acts such as cyber-bullying, young adults are not immune. Tritt and Duncan (1997) examined the relationship between adolescent bullying and loneliness and self-esteem in adults. Results from this study showed that

adolescents who were bullied had increased levels of loneliness and decreased levels of self-esteem as adults (Tritt & Duncan, 1997).

Young adulthood, which may last until approximately 35 years of age, has been called the intimacy versus isolation stage (Erikson, 1968). Individuals who are in this stage seek to initiate and maintain romantic relationships (Erikson; Goldstein, 2008). These relationships may be affected by bullying experiences, which may cause a decrease in self-esteem and an increase in loneliness (Tritt & Duncan, 1997). Because college-aged students are predominantly adolescents (Marcia, 1968) and young adults, this study will focus on the reflective experiences of college students.

Social Aggression

Social aggression has been defined as, "behaviors directed toward damaging another's self-esteem, social status, or both and may take such direct forms as verbal rejection, negative facial expressions or body movement, or more indirect forms such as slanderous rumors or social exclusion" (Underwood, 2003, p. 23). This type of behavior is a form of aggression that attempts to harm an individual by damaging reputation and destroying social networks (Crick, 1996; Crick & Grotpeter, 1995). Adolescents and young adults are particularly vulnerable to such victimization due to the high level of importance placed on social acceptance (Espelage & Swearer, 2003; Kupersmidt & Coie, 1990; Paulos, 2007).

Capella and Weinstein (2006) explain that the psychological bruises produced by socially aggressive behavior are as painful as the physical bruises produced by overt forms of physical aggression. They go on to state that while many anti-bullying campaigns have targeted overt physical aggression, no investigator has evaluated an anti-violence or anti-bullying program in a systematic way that is designed to reduce social aggression in our schools.

Social acceptance is not only important to those who are bullied, but important to the perpetrator as well. In fact, covert forms of social aggression may be chosen by adolescents and young adults as the weapon of choice because of the anonymity these types of behaviors can provide. This anonymity affords the perpetrator a reduced risk for retaliation as well as being able to maintain a positive image among his/her peer group, for example, often these covert behaviors do not appear "mean" to other students (Xie, Swift, Cairns, & Cairns, 2002).

Certain types of social aggression may serve to increase an individual's social status (Porhola, 2006). Maintaining or enhancing status through socially aggressive behavior has been studied by several researchers (Cilessen & Rose, 2005; Grotpeter & Crick, 1996; Hawley et al., 2007; Walcott et al., 2008). Grotpeter and Crick found that when compared to overt forms of aggressive behavior, social aggression actually served to increase intimacy and personal disclosure among perpetrator friendships. Capella and Weinstein (2006) labeled this type of aggressive behavior as "instrumental" aggression. Research has uncovered that some of the functions of instrumental aggression include: building group cohesion, setting group norms, maintaining status, alleviating boredom, and/or gaining attention (Owens et al., 2000; Underwood, 2003). Although socially aggressive acts may increase popularity among peer groups by working together with other factors such as social dominance and social group centrality (Xie et al., 2003), it may not increase likability (Cillessen & Borch, 2006; Rose et al., 2004).

Bullying

Adolescents and young adults may experience bullying as a form of social aggression. According to the National Center for Education Statistics (2008), bullying is defined as treating others abusively by means of force or coercion. Adolescents who are bullied may experience

emotional and psychological disturbances such as loneliness, depression, and maladjustment (Crick & Bigbee, 1998; Crick & Grotpeter, 1996; Nansel et al., 2001; Prinstein et al., 2003; Storch et al., 2003). Targets of bullying may also experience behavioral consequences such as poor school attendance (Ringwalt et al., 2003), low academic scores (Wei & Williams, 2004), dropping out of school (Beauvais et al., 1996), and personality as well as neuropsychological disorders (Coolidge, DenBoer, & Segal, 2004).

In order to measure the negative effects of bullying, the National Institute of Child Health and Human Development (http://www.nichd.nih.gov/) surveyed nearly 16,000 adolescents in grades six through ten (Nansel et al., 2001). Students who had experienced face-to-face bullying were more likely to experience poor social and emotional adjustment than those who had not (Nansel et al.).

Ma, Stewin, and Mah (2001) point out that bullying may still be the most dominant form of social aggression in schools today. Statistics provided by the National Center for Education Statistics (NCES, 2008; http://nces.ed.gov/) state that in 2005, 28% of 12-18 year-old students reported having been bullied at school during the last six months. However, this figure includes both physical as well as social forms of aggression. Of this 28%, 19% said that they had experienced bullying that consisted of being made fun of; 15% reported being the subject of rumors; and 9% had been pushed, shoved, tripped, or spit on (NCES). These figures indicate that 34% of students have experienced some form of socially aggressive behavior while only nine percent of students have experienced physical aggression.

Chapell et al. (2004) surveyed 1,025 college undergraduates and found that 18.5% of those sampled had been bullied by another student once or twice. In addition, researchers have found that workplace bullying is also of concern (Cooper, Einarson, Hoel, & Zapf, 2003; Vartia,

2001). Vartia surveyed 949 adult workers with a mean age of 40 and found that ten percent had been targets of workplace bullying. This continuation of bullying through an individual's developmental stages suggests that bullying is not an age-isolated form of aggression.

Two researchers created a definition for cyber-bullying that was based on Olweus (2003) definition for bullying (Smith, et al., 2008; Solberg & Olweus, 2003). Solberg and Olweus state:

> We say a student is being bullied when another student or several other students
>
> - say mean and hurtful things or make fun of him or her or call him or her mean and hurtful names;
> - completely ignore or exclude him or her from their group of friends or leave him or her out of things on purpose;
> - hit, kick, push, shove around, or threaten him or her;
> - tell lies or spread false rumors about him or her or send mean notes and try to make other students dislike him or her;
> - and do other hurtful things like that;
>
> These things may take place frequently, and it is difficult for the student being bullied to defend himself or herself. It is also bullying when a student is teased repeatedly in a mean and hurtful way. But we don't call it bullying when the teasing is done in a friendly and playful way. Also, it is not bullying when two students of about the same strength or power argue or fight. (p. 246)

For the purposes of the current study, bullying is defined when messages (verbal statements, texts, images) from others illustrate three criteria, including "negative content," "repeated," and "context." In terms of "negative content," bullying consists of verbal or written messages delivered directly by another person that: (a) are mean/hostile, hurtful, abusive or

coercive; (b) make fun of the target; (c) calling the target names; or (d) are lies or spread false rumors about the target. In terms of "repeated," to be considered bullying the target must be exposed to the above types of messages more than once by the same person or by the same group of people. These messages must be deliberate and intended to harm the target in some way.

In terms of "context," bullying occurs in one of two ways. The first way is via face-to-face delivery (what people say to the target directly). The second way is called cyber-bullying and is carried out via some form of media such as a cell phone, email, text or IM, chat rooms, or via social networking websites such as *Facebook, My Space, Twitter, YouTube*, etc.

The term "repetition" is used in both Olweus (1993) and Solberg and Olweus (2003) definition for bullying. Dooley et al. (2009) point out that the psychological harm caused by bullying behavior may not stem from the repetitive nature of the act. The present study acknowledges that the term "repetition" in cyber-bullying can be difficult to operationalize (Dooley et al.). However, it is important to address the concept of repetition because research has pointed out that one single act such as posting an embarrassing photo on a website may be considered a repetitive act when the photo is viewed or has the potential to be viewed by many individuals (Fauman, 2008). Therefore, the present study will consider bullying to be repetitive in nature if the bullying messages are delivered or viewed more than once.

Effects of Bullying

The negative effects that result from being bullied seem to continue into young adulthood (Willard, 2007). Huesmann et al. (1984) and Huesmann et al. (2003) found that bullies had greater adjustment problems than their non-bully peers and discovered that 25% of those bullies had a criminal record by age 30 as opposed to five percent identified as a non-bully. Strom and Strom (2005) describe some of these effects as depression, adjustment issues, and the inability to

maintain stable relationships. Bullies may also experience the negative effects of social aggression such as higher levels of antisocial behavior as adults (Tattum, 1989). Olweus (1999) reported that 40% of bullies had three or more criminal convictions by the age of 24 as opposed to only ten percent of those who had not been either a bully or a target of bullying.

Emotional effects. Targets of bullying may experience a variety of emotional effects such as anxiety and depression (Dill et al., 2004; Erath et al., 2007; Lopez & DuBois, 2005). Anxiety may have a neurological base or may develop from exposure to an anxious caregiver or other experiences that cause an individual to feel they have a lack of control (Papalia, Olds, & Feldman, 2008). Adolescents and young adults who have been bullied may feel a lack of control over the situation. When Karhunen (2009) asked adolescents why some students are bullied, the responses varied greatly. Students attributed bullying to such things as: the victim is a deviant student; the bully is a troubled student; the bully is envious; there was a disagreements; or the students said they had no idea. This lack of consensus from adolescents may indicate an overall sense of inability to control a situation one cannot understand.

Depression has been listed by Olweus (1994) as one effect caused by being bullied as an adolescent that could continue into adulthood. Adults who have been bullied as an adolescent continue to have negative consequences. Kaltiala-Heino, Frojd and Marttunen (2010) surveyed 2,070 15-year-old girls and boys in Finland to measure depression as both a dependent as well as an independent variable to bullying. Two years later, a follow-up study was done and it was concluded that being bullied predicts later depression.

Academic effects. Targets of bullying may experience academic effects that include poor attendance and a decrease in grades (Dube & Orpinas, 2009; Schwartz, Gorman, Nakamoto, & Toblin, 2006). Schwartz et al. examined the association between victimization and academic

outcomes in elementary school students. Results indicated grade point averages and achievement test scores were lower for students who had been victimized by peers. In addition, Dube and Orpinas explain that part of an individual's healthy developmental process is educational completion. However, absenteeism caused by negative reinforcement, such as bullying at school may inhibit healthy development. After gathering information from 99 adolescent students referred for attendance problems, it was found that 17% of those surveyed missed school to avoid fear- or anxiety-producing situations, remove themselves from an adverse social situation or to gain positive tangible rewards (Dube & Orpinas). Berger (2007) states that one way to measure victimization is by reviewing school attendance records. According to Berger, absences in school increases with severe victimization.

Social effects. Targets of bullying may experience a variety of social effects (Berger, 2007; Bond et al., 2001; Light & Dishion, 2007; Montgomery, 1994). Some of these social effects may include Post-Traumatic Stress Disorder (Montgomery, 1994); and internalizing or externalizing (i.e., shootings) of problems (Berger, 2007). Loneliness and peer rejection have been noted to be two serious problems that result from being bullied (Bond et al., 2001; Light & Dishion, 2007).

Tritt and Duncan (1997) conducted a study of undergraduate college students and found that loneliness in adults may be linked to being bullied as a child. Ireland and Power (2004) found that emotional loneliness (defined as feelings of loneliness while still maintaining social contact with others) increased among the 19-year old participants who had been bullied. These researchers note that it was difficult to determine whether or not loneliness was the cause or the outcome of the bullying.

After sampling 3,312 adolescent males and females, Dijkstra, Kornelis, Siegward, and Rene' (2008) found peer rejection increased and peer acceptance decreased when adolescents are bullied. Being rejected by one's peers may have negative impact on both emotional and social development of adolescents which may lead to adjustment difficulties in adulthood (Kupersmidt & Coie, 1990)

Technology

Due to the fact that adolescents today are the first generation to grow up in a society where technologies such as the Internet and cellular phones are commonplace (Berson, Berson, & Ferron, 2002), bullies have potential access to victims around the clock. According to statistics gathered by the Pew Internet and American Life Project (2008; see *http://www.pewinternet.org*), 71% of teens own cell phones; 38% of teens send text messages daily; 26% of teens send messages via social networks; and 24% of teens IM daily. This availability gives bullies greater power and opportunity to cause emotional damage to targets.

According to a survey by the Pew Research Center's Internet & American Life Project in 2009 (*http://www.pewinternet.*org), 56% of adult Americans have wireless access to the internet. In addition, nearly one-third of Americans (32%) use a cell phone to access the internet in order to email, instant-message, or seek information (2009; see *http://www.pewinternet.org*). In 2005, 90% of U.S. college students owned a cell phone or other mobile device (see *http://www.textually.org)*. The Pew Internet and Life Project reports that 86% of college students use the internet and that today's college students are "much more likely than other online Americans to use instant messaging" (see *http://www.pewinternet.org).*

According to statistics gathered by the Pew Research Center's Internet & American Life Project in 2005 (*http://www.pewinternet.org*), 87% of teenagers use the internet on a daily basis.

This totals 21 million teens, up from 17 million a mere five years ago. In 2005, almost half the teenagers in America (45%) owned a cell phone and 33% of teens used text messaging (*http://www.pewinternet.org*). One in every four teens who own a cell phone use the cell phone to connect to the internet (Lenhart et al., 2005). Due to the fact that technology has become something teens, adolescents, and young adults do and helps to define who they are, it is no wonder that forms of bullying are also transitioning.

The rapid rate at which technology is developing may indicate a developmental shift from face-to-face forms of bullying to what has now become known as "electronic bullying," "online social cruelty/aggression," or "cyber-bullying" (Kowalski, 2007). Because technology is so ubiquitous among Americans, it is no surprise that cyber-bullies use two main tools when bullying others, cell phones and computers (Patchin & Hinduja, 2006). According to Lacey (2007), who surveyed adolescents about internet harassment, 41.5% of those surveyed had been cyber-bully victims, 29.1% admitted to being a cyber-bully, and 59.2% of those who had been victims became cyber-bullies themselves.

Cyber-Bullying

The term cyber-bullying has been defined by Belsey (2004) as:

> The use of information and communication technologies such as email, cell phone and pager text messages, instant messaging, defamatory personal Web sites, and defamatory online personal polling Web sites, to support deliberate, repeated, and hostile behavior by an individual or group, that is intended to harm others. (p. 8)

and will be used to guide this study. Menisini and Nocentini (2009) discuss the issue of clearly defining the term "repeated" in the literature, "moreover some authors stated that cyber-bullying, even if a single individual act, can be circulated widely or copied by others meeting the criteria

of repetition and frequently creating an imbalance of power" (p. 230). Also, as mentioned previously in the discussion regarding the definition of face-to-face bullying, according to Dooley et al. (2009), a single act of cyber-bullying can have repetitive qualities.

Although there has been a shift toward a more technological society overall, research in many areas of the social sciences has not transitioned alongside. It is important to note that while bullying and social aggression in general have been extensively studied, there seems to be a gap between the proliferation of technological advancements among adolescents and young adults and research into the areas of cyber-bullying. There have been a select number of studies surrounding the general prevalence of the cyber-bullying phenomenon (Kowalski, 2007; Lacey, 2007). Researchers have described the area of cyber-bullying as not being sufficiently explored. Ybarra and Mitchell (2004) state "little is known about experiences of internet victimization" (p. 1308). Beran and Li (2005) state that "researchers have yet to examine systematically the nature of cyber-bullying" (p. 266). Patchin and Hinduja (2006) state "little research to date has been conducted on cyber-bullying" (p. 149). Smith et al. (2008) state, "cyber-bullying causes distress, but its impact relative to face-to-face bullying is uncertain" (p. 378).

Qing Li (2005) found that there is such a close tie between bullying and cyber-bullying that "cyber-bullying should not be examined as a separated issue" (p. 1787). However, Slonje and Smith (2008) describe cyber-bullying as a new form of bullying that has features that distinguish it from face-to-face bullying such as the breadth of the audience. Patchin and Hinduja (2006) have called cyber-bullying, "a new permutation of bullying" (p. 148). Raskauskas and Stoltz (2007) have described cyber-bullying as a "new type of bullying" (p. 565) that has clearly defined differences such as 24-hour availability, which provides more of a "threat to psychological health than face-to-face bullying" (p. 565) and anonymity that may provide an

"even greater power imbalance" (p. 565) as well. Ybarra and Mitchell (2004) describe an additional difference between face-to-face bullying and cyber-bullying which is that cyber-bullies are detached from their victims and are able to remove themselves from the impact of their actions. Shariff and Johnny (2007) also explain that "the online discourse medium may actually intensify perceived harassment" (p. 315).

This research supports the need to examine cyber-bullying as a unique category, separate from bullying in general. The present study recognizes this need and will address such things as the psychological process and the effects of cyber-bullying (see Figure 1).

Current research has noted other differences between cyber-bullying and face-to-face bullying, such as the repetitive nature and the power imbalance between face-to-face bullying and cyber-bullying. According to Dooley et al. (2009), while face-to-face bullying is clearly defined as a repeated act, an isolated incidence of cyber-bullying (e.g. photos or videos posted online) may be considered repeated through multiple viewings by others. Dooley et al. point out that the power imbalance is different between face-to-face bullying and cyber-bullying as well. While the imbalance of power found in face-to-face bullying primarily lies in physical and/or psychological traits of the bully, Dooley et al. explains that cyber-bullying, "may be based on a victim's lack of power as opposed to a perpetrator's possession of power" (p. 184).

The Youth Internet Safety Survey (Finkelhor, 1999, 2004) examined a variety of characteristics of internet harassment. The results of the first survey (Finkelhor, 1999) indicated that six percent of the 1,501 young people ages ten through 17 who reported using the Internet at least once per month for the past six months experienced threats, rumors, or other offensive behavior and two percent of those surveyed indicated feeling very or extremely upset or afraid. Results from the second survey (Finkelhor, 2004) indicated an increase in both incidents and

levels of distress. In the second survey, nine percent of those surveyed reported threats, rumors, or other offensive behavior and three percent reported marked distress.

There have been limited studies done that have compared face-to-face bullying with cyber-bullying. Ybarra and Mitchell (2004) state that studies surrounding face-to-face bullying can be used as a reference point for investigating Internet harassment.

Li (2007) has compared face-to-face bullies and cyber-bullies. Two middle schools chosen for their interest in technology were selected to take part in a survey which was constructed to measure both student demographics as well as their experience related to cyber-bullying. Li concluded that face-to-face bullies were more likely than non-bullies to engage in cyber-bullying and face-to-face bullying targets were more likely to become cyber-bullying targets than non-targets.

In addition, Raskauskas and Stoltz (2007) studied the relationship between cyber-bullying and face-to-face bullying among adolescents. Eighty-four students completed questionnaires which showed that students who were likely to bully in the face-to-face manner were equally as likely to engage in cyber-bullying. Kowalski, et al. (2005) found an apparent "role switching" when it comes to bullying, which may indicate a transition from face-to-face bullying to cyber-bullying. This is supported by Willard (2007) who explains that students not currently involved in face-to-face bullying at school are becoming involved in cyber-bullying, both as cyber-bullies and as victims.

Social Presence Theory

Researchers have examined how computer (or technologically) mediated communication affects human interaction (Biocca, Burgoon, Harms, & Stoner (2003). Biocca, et al. defines social presence as interactions that occur within a mediated environment. According to Biocca et

al., “cognitive states associated with social presence may inevitably involve some form of mental model of the other” (p. 7). Biocca et al goes on to state, “a substantial mental model of the other is activated immediately upon detection of another intelligence” (p. 7). This modeling, according to Biocca et al., is “necessary to reduce the uncertainty and to model the intentions of the other” (p. 7).

The present review of literature has shown cyber-bullying is a different form of bullying. If a cyber-bullying target is unable to clearly create a mental model or representation of the intentions of the bully, the target may overreact or under react to the cyber-bullying messages. In the case of Phoebe Prince, whether or not the bullies intended for her to commit suicide is not clear. However, Phoebe may have created a model of the intentions she perceived from the bullies to be uncertain or threatening enough to take her own life. The present study will examine the cognitive states that are associated with social presence by testing the effects cyber-bullying has on adolescents and young adults.

Effects of Cyber-bullying

One of the differences between face-to-face bullying and cyber-bullying is the anonymous nature of the act. Strom and Strom (2005) explain that cyber-bullies are able to hide behind a mask of anonymity by using fictitious screen names. Kinney (1994) points out face-to-face bullies may be quite skilled at avoiding any defensive acts on the part of the victim. However, the anonymity provided by cyber-bullying may increase this power over the victim by rendering the victim helpless when it comes to responding to cyber-bullying messages (Patchin & Hinduja, 2006).

The concept of anonymity has been studied and resulted in the development of two theoretical models that have been used to describe social effects of computer-mediated

communication (CMC). Social Identity Model of Deindividuation Effects (SIDE) was developed by Postmes, Spears, and Lea (Postmes et al., 1998; Postmes et al., 2000; Spears, Postmes, Lea, & Wolbert, 2002) to help explain the effects of anonymity on group behavior. One of the primary claims of the SIDE model is that "anonymity induces a shift in focus from one's individual identity to one's social identity" (Rains & Scott, 2007, p. 66). It has been reported that anonymity may serve to equalize status differences between individuals. The equalization aspect of anonymity in cyber-bullying is yet another factor that makes it different from face-to-face bullying. Physical stature and popularity are two factors that contribute to the intimidation one feels when faced with face-to-face bullying.

As the SIDE model suggests, the physical and social status of the anonymous bully in a computer-mediated context is not a contributing factor to the intimidation felt by the target of cyber-bullying. Importantly, the SIDE model posits that anonymity within an interaction, such as occurs in a cyber-bullying incident, has cognitive consequences (Reicher, Spears, & Postmes, 1995). A positive cognitive consequence could include feeling more connected to the group to which the anonymous individual belongs. However, if an individual interacts anonymously with someone without group identification, according to the SIDE model, anonymity could enhance feelings of isolation (Postmes, Spears, Sakhel & De Groot, 2001).

Uncertainty seems to be a characteristic of cyber-bullying that is not prevalent in face-to-face bullying. Pure (2009) states "the most prominently documented aspect unique to cyberbullying is the fact that cyberbullies have the ability to remain anonymous" (p. 43). The feeling of helplessness is one main characteristic found in depression (Whiston, 2009). Therefore, depression and emotional damage may be greater for victims of cyber-bullying than those who are victimized by face-to-face bullying. Camodeca, Goossens, Schuengel, and

Meerum Terwogt (2003) found that when a bully's intentions were ambiguous, targets were more likely to have increased levels of blame, anger, and retaliation.

Another difference is that cyber-bullies have the ability to reach a large number of people in a short amount of time (Willard, 2007). For example, if a cyber-bully decides to send an embarrassing photo, the potential for that photo to be seen by the victim's peers are greater than with the tactics of a face-to-face bully (Slonje & Smith, 2008). According to Shariff and Johnny (2007), high school student, Ghizlain Reza, received international attention when a video of himself imitating a *Star Wars* character was stolen by peers and posted on the Internet. This website received over 5,000,000 hits and nearly 106 copies of this video were made. Ghizlain eventually dropped out of school and his parents attempted to stop legally the cyber-bullying by suing the boys who stole the video and posted it on the Internet. This lawsuit was eventually settled out of court.

Recent research includes the psychological ramifications of cyber-bullying and the assessment tools needed to gauge cyber-bullying (Mason, 2008). Aricak et al. (2008) conducted a study on cyber-bullying among Turkish adolescents that also investigated the coping strategies utilized. The results of this study listed the common coping strategies as: 25% telling their peers and 30.6% responding by "blocking" the harasser. Research has also been done specifically on the various coping strategies utilized by the victims of cyber-bullying among American adolescents (Cowie et al., 2002; Erath, 2006; Oliver, 2007; Rosario, 1994; Smith & Shu, 2000; Vashchenko, 2007). Smith and Shu reported that 30% of bullied students told no one. Many adolescents are highly reluctant to report their experiences of harassment (Oliver), which may be due to adolescents thinking that parents or authorities will not understand or take them seriously, adolescents fearing overreaction, adolescents fearing greater retaliation on the part of the cyber-

bully, and/or their own risqué online behavior has placed them in an embarrassing position (Willard, 2007). Thus, cyber-bullying victims may internalize the abuse and not seek help (Cowie et al., 2002).

When compared to bullies, targets of bullying have greater levels of depression, anxiety, loneliness, and dissatisfaction at school (Crick & Grotpeter, 1996; Hawker & Boulton, 2000; Rigby & Slee, 1993). Hawker and Boulton conducted a meta-analysis on studies of peer victimization and psychosocial maladjustment. A link between peer victimization and depression was evident (mean effect size = .45, $p < .0001$).[1] A positive association existed between anxiety and self-esteem (mean effect size = .25, $p < .0001$) as well as between victimization and loneliness (mean effect size = .32, $p < .0001$).

Such internally focused methods of dealing with cyber-bullying may result in cognitive distancing which manifests itself as denial, refusal to think about the incident, or self-directed anger that prompts individuals into believing to have perpetuated or deserved the abuse in some way, which subsequently may lead to anxiety (Crick & Bigbee, 1998), depression (Hawker & Boulton, 2000), or outward acts of violence (Willard, 2007). In addition, adolescents and young adults who are victims of cyber-bullying and internalize the problem may be at risk for increased anxiety, loneliness, peer rejection, and social difficulties (Kochenderfer-Ladd & Skinner, 2002).

Emotional effects. Targets of cyber-bullying may experience emotional effects (Raskauskas & Stoltz, 2007; Willard, 2007). Anxiety and depression have been noted to be two important effects worth examining (Crick & Bigbee, 1998; Hawker & Boulton, 2000). According to the National Institute of Health (NIH), "anxiety is a normal reaction to stress. It

[1] Effect size, a common term in meta-analyses, measures the strength of the relationship between two variables.

helps one deal with a tense situation in the office, study harder for an exam, or keep focused on an important speech. In general, it helps one cope. But when anxiety becomes an excessive, irrational dread of everyday situations, it has become a disabling disorder" (see *https://tdksc.ksc.nasa.gov*).

According to the American Psychological Association (APA),

> Anxiety is a symptom. People who feel anxiety experience: muscle tension, restlessness, panic, or a sense of impending doom. They often have anxious thoughts, such as fears of dying of a heart attack, fears of embarrassment or humiliation, or fears of something terrible happening. In addition, they often have uncomfortable physical sensations, including heart palpitations, sweating, dizziness, or shortness of breath. Some people with anxiety disorders perform certain rituals (checking door locks or hand washing) or avoid certain situations (bridges, freeways, airplanes, or social situations) in order to cope with anxiety. (see *http://www.apa.org*).

Ybarra and Mitchell (2004) found that cyber-bullying creates distress. Picture/video clip and cell phone bullying resulted in higher levels of distress than face-to-face bullying (Ybarra et al., 2006). Miceli and Castelfranchi (2005) define anxiety as "a mental state characterized by the belief that some future event implies a possible and uncertain danger, and the goal is to avoid the danger, and to know whether the danger will come true" (p. 294).

According to the NIH:

> Depression is a serious medical illness; it's not something that you have made up in your head. It's more than just feeling 'down in the dumps' or 'blue' for a few

> days. It's feeling 'down' and 'low' and 'hopeless' for weeks at a time. (see *http://www.nimh.nih.gov*).

According to the APA,

> Today's schoolchildren are at a higher risk for depression than any previous generation. As many as 9% of children will experience a major depressive episode by the time they are 14 years old, and 20% will experience a major depressive episode before graduating from high school. Having suffered from depression as children, these young people are much more vulnerable to depression as adults. (see *http://www.psychologymatters.org*)

School children having greater rates of depression than past generations may indicate a link between this increased rate of depression and the introduction of cyber-bullying. Face-to-face bullying has been associated with a variety of mental and emotional health problems, including anxiety and depression (Crick & Bigbee, 1998; Nansel et al., 2001). While Ybarra et al. (2004) found that one-third of those targeted by online harassment reported feeling emotional distress and targets of cyber-bullying were almost six times as likely to report emotional distress due to cyber-bullying; additional research has not made it clear whether cyber-bullying is associated with such problems. Such associations would increase the generalizability of research on cyber-bullying as well as increase the need for the bullying and social aggression prevention and intervention literature to include this type of aggressive behavior.

Increased anonymity, larger audiences, and the accessibility of technology to adolescents and young adults are some reasons why cyber-bullying has been described as possibly being

linked to negative emotional effects such as anxiety and depression. Therefore the following hypothesis is proposed:

H1a: Being the target of cyber-bullying will be correlated positively with anxiety and depression.

Academic effects. Poor attendance and a decrease in grades have been noted to be two effects of bullying noted in current research (Willard, 2007). According to the 2009 *Prevent Bullying Guide* (see *http://www.GovAmerica.org*), losing interest in attending school or dropping grades are warning signs that a child is being bullied.

The high school student Ghizlain Reza dropping out of school due to being cyber-bullied is no isolated incident. Willard (2007) explains that being bullied in general can have a negative impact on a student's concentration and school performance. In the case of Phoebe Prince, one week prior to her committing suicide, she reported the incident to school officials. Although it has been reported that disciplinary actions were taken, the bullying continued up to the day of Phoebe's death. This lack of serious attention on the part of the faculty may lead to school avoidance. While in some extreme cases of bullying it may help the target to move to another school, however, with the technological advancements and the increased use of downloading video to the internet, as we have seen in the case of Phoebe Prince, it may be difficult for an adolescent or young adult to escape a cyber-bully's message. Therefore the following hypothesis is proposed:

H1b: Being the target of cyber-bullying will be correlated positively with absences and negatively with grades.

Social effects. Targets of cyber-bullying may experience a variety of social effects (Willard, 2007). Harm to their personal identity (Gavazzi et al., 1993), lower self-esteem (Austin & Joseph, 1996), and lower self-worth (Callaghan & Joseph, 1994) are effects that can create an increased risk for social difficulties (Kochenderfer-Ladd & Skinner, 2002). Loneliness and peer rejection have been noted to be two serious problems that result from being bullied (Slonje & Smith, 2008; Nansel et al., 2003).

Willard (2007) has described a new type of bully who no longer resembles the description of a face-to-face bully. These bullies are referred to as *Social Climber Bullies*, and include students from the social in-crowd. According to Willard, their aggressive behavior may be overlooked due to their popularity with their teachers. This poses a challenge for bully targets because, according to Willard, if they report the behavior it "would totally undermine their ability to gain admission to the in-crowd" (p. 35).

According to Crick and Dodge's (1994) Social Information Processing model, evaluation of response appropriateness and potential peer support are assessed as well as an additional assessment of their own ability to perform the selected behavior prior to the actual performance of the selected behavior. However, due to the anonymous nature of certain cyber-bully tactics, it may be difficult for a cyber-bullying target to assess potentially supportive peers; unlike face-to-face bullying. Smith et al. (2008) asked students whether they believed cyber-bullying had more impact on targets than face-to-face bullying. One student responded to this question by saying, "cyber-bullying could be worse, you haven't got friends around you to support you" (p. 381). This uncertainty of whom they can trust may also increase the target's emotional distress.

Slonje and Smith (2008) interviewed 360 adolescents between the ages of 12 and 20 and asked them open-ended questions to which some students indicated cyber-bullying was worse

than face-to-face bullying because "you haven't got friends around you to support you" (p. 381). Storch, Masia-Warner, Dent, Roberti, and Fisher (2004) point out that having a positive relationship with others may decrease the loneliness felt by some cyber-bullying targets. However, Smith et al. (2008) explain that students surveyed stated that they may be reluctant to admit being bullied and the actual percentage of adolescents who are targets of cyber-bullying is higher than what is reported. This may indicate that cyber-bullying creates a feeling of dealing with the bullying incident alone.

Patchin and Hinduja (2006) state "cyber-bullying can capably and perhaps more permanently wreak psychological, emotional, and social havoc" (p. 155). Nansel et al. (2003) explain that students may avoid socializing with bullying targets due to a fear that they themselves may be bullied or lose social status. Nansel et al. also go on to state that being a target of bullying behavior increases the chance for parental involvement, which limits the levels of independence of the target, thereby perpetuating the bullying cycle. Therefore the following hypothesis is proposed:

H1c: Being the target of cyber-bullying will be correlated positively with loneliness and peer rejection.

Moderator and Mediator Models

As Figure 1 shows, social processes such as those that occur during an interaction between a bully and a victim can be complex due to a myriad of variables that could possibly change, impact, or significantly alter outcomes. Weatherbee and Kelloway (2006) point out that "in order to determine the optimum methods for the prevention or reduction in frequency of these behaviors" (p. 456) or to "mitigate the impacts of adverse outcomes, it is first necessary to

identify and more fully understand the relationship between antecedents and mediating or moderating factors" (p. 456).

Preacher and Hayes (2007) further support the need for deeper understanding of the basic question of whether or not variation in *X* causes variation in *Y*. Although an examination of mediating and moderating variables is important, focus on this aspect of research is "largely absent" (Preacher & Hayes, 2007, p. 15). This need to examine process is supported by Morgan and Wilson (2005) who explain that theories that elaborate processes are important to include in research and not to simply focus on message production. Morgan and Wilson further state, "this challenge falls squarely on the shoulders of communication researchers" (p. 21). Therefore, it is important at this point to distinguish between and gain a deeper understanding of moderating and mediating variables as they apply to the social processes of bullying.

Moderators

When a third variable influences the direction or strength of the relationship between the independent and dependent variable, it is said that the third variable *moderates* that relationship (Baron & Kenny, 1986). In this case, no causal inferences may be drawn and the relationship

would be considered "correlated." The moderating variable may indicate the conditions under which the outcome occurs (see Figure 2; Baron & Kenny).

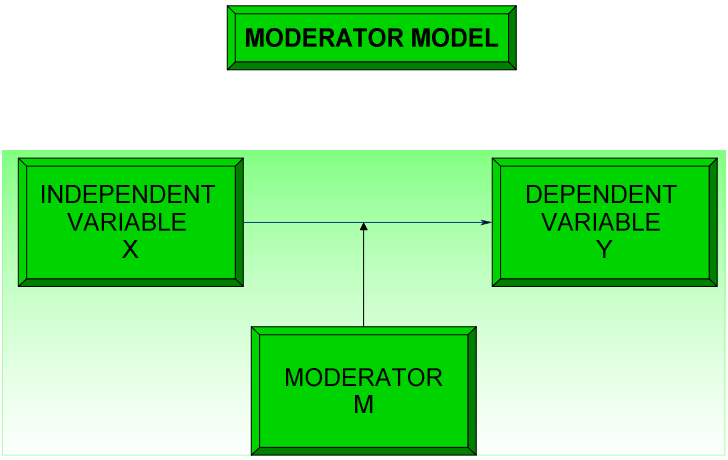

Figure 2. General moderator model

In order to examine cyber-bullying using a moderator model, the strength of the relationship between exposure to the cyber-bullying message and, for example, emotional effects (anxiety and depression) would be moderated by whether or not the individual was socially connected (see Figure 1). In other words, numerous studies surrounding face-to-face bullying have already determined a significant relationship between being bullied and depression (Crick & Bigbee, 1998; Crick & Grotpeter, 1995; Nansel et al., 2001; Prinstein et al., 2001; Storch et al., 2003). If a significant relationship is determined to exist between cyber-bullying and depression, the strength of that relationship may be increased or decreased based on the attachment style present in a particular individual.

Kochenderfer-Ladd and Skinner (2002) examined children's coping strategies as potential moderators of the effects of peer victimization. Hierarchical regression analysis was used to test the hypothesis that children's coping strategies moderate the relationship between their victimization experience and social maladjustment as well as the hypothesis that sex

differences would moderate coping strategies differently. It was found that coping strategies, such as problem solving, may help individuals who have not been victimized; however, this type of coping exacerbated the situation for those who had been victimized. It was also found that some forms of coping were dependent on gender. While seeking social support buffered victimization for females, seeking social support was associated with lower peer preference for males.

Davidson and Demaray (2007) examined social support as a moderator between victimization and internalizing-externalizing distress from bullying. The researchers predicted that higher levels of social support would buffer the relationship between bullying victimization and externalizing distress. Gender differences were examined as well. Gender differences were found as well as different levels of moderation from a variety of support types (friend, teacher, parent, etc.).

In summary, moderators alter outcomes. Research has shown the importance of considering moderators when conducting a study (Davidson & Demaray, 2007; Kochenderfer-Ladd & Skinner, 2002). Therefore, the present study will include an examination of moderators to determine whether or not the strength of outcomes is affected.

Potential Moderating Variables for the Effects of Bullying

Biological Sex. Studies have sought to uncover sex differences between male and female adolescents (French, Jansen, & Pidada, 2002; Xie et al., 2003). There have been studies that have revealed no sex differences in the area of social aggression (Coyne, Archer, & Eslea, 2006; Loukas et al., 2005; Prinstein et al., 2001). However, Crick (1996) found that social aggression may contribute to social maladjustment for females, but not for males. Slonje and Smith (2008)

found few significant sex differences for any type of bullying both for cyber-bullying targets and bullies. Ybarra and Mitchell (2004) also found no significant sex differences for cyber-bullying.

Some studies have determined that females are predominantly the perpetrators of social aggression, while males are more physically aggressive (Loudin, Loukas, & Robinson, 2003; Paquette & Underwood, 1999; Tomada & Schneider, 1997). Females using social forms of aggression versus physical forms of aggression have been found to have more intense responses to social aggression than males (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992). Smith et al. (2008) found cyber-bullying targets were more likely to be female.

Although Smith et al. (2008) postulated that males may be attracted to the technology factor involved in cyber-bullying, females have led the overall technological communication explosion (see *http://www.pewinternet.org)*. According to Lenhart (2005), females have a higher likelihood of using email and text messaging over their male counterparts as well as boys and girls aged 12-14. Willard (2007) explains that the most popular form of online activity for males is gaming, however for females it is communication. This seems to remain consistent with previous research into sex differences within more face-to-face forms of bullying. Casey-Cannon, Hayward, and Kris (2001) describe the prevalent forms of female bullying as ostracizing, exclusion, indirect/relational, and verbal harassment. Given that prior research has shown that biological sex is an important variable that may trigger differential effects due to bullying, the following hypothesis serves to establish the importance of biological sex in this project, which can then be used as evidence for its potential as a moderator in the model. Therefore, the following hypothesis is presented:

H2: Females will be cyber-bullied more often than males.

Attachment style. Crick and Dodge (1994) explain that past events such as the experience of early attachments and rejection may have an impact on future social information processing and behavior. According to Crick and Dodge (1994):

> In the present model, it is proposed that a mental representation of past events is stored in long-term memory. Later, this memory is integrated with other memories into a general mental structure that guides the processing of future social cues. (p. 78)

Bowlby (1969) describes this mental memory structure as a *working model of relationships.* When adolescents and young adults are faced with an event such as cyber-bullying and have limited past representations of similar external cues, they may rely on cognitive heuristics (Crick & Dodge, 1994). While this may simplify the cognitive processing, thereby allowing for more efficient decision-making, it may also result in errors in judgment and/or reasoning.

These fundamental heuristics may have developed in an individual during the formation of attachments to adult figures. If an adolescent or young adult has an insecure attachment style and has a fundamental internal working model of relationships that has created a sense of insecurity within that individual, a target of cyber-bullying may resort to his/her most basic cognitive model of how to respond. This response in an insecure adolescent or young adult may appear erratic or over reactive to outsiders, but may be appropriate to the individual, who is now experiencing the cyber-bullying event as though it were the original trauma that had created the attachment issue in the first place.

During infancy and early childhood, a family provides the basis for the development of an internal working model of relationships and social connections. If the family provides a safe, sensitive, and responsive environment for a child, a secure attachment style is more likely to

develop (Bowlby, 1969). However, if the family setting is insensitive and/or inconsistent, an insecure attachment style is more likely to be formed (Bowlby). Adolescents and young adults who developed an insecure attachment style could also develop a victim schema whereby they respond to a cyber-bully in a weak and helpless manner (Perry, Hodges, & Egan, 2001; Rodkin & Hodges, 2003), thereby perpetuating low self-esteem. Given that prior research has shown that attachment styles are important variables that may trigger differential effects due to bullying, the following hypothesis serves to establish the importance of attachment styles in this project, which can then be used as evidence for their potential as moderators in the model. Therefore the following two hypotheses are proposed:

H3a: Individuals who report being targets of cyber-bullying and who possess a secure attachment style will experience less primary and secondary effects than individuals who report being targets of cyber-bullying and who possess an insecure attachment style.

H3b: Individuals who report being targets of cyber-bullying and who possess a secure attachment style will be more likely to tell someone about the cyber-bullying incident than individuals who report being targets of cyber-bullying and who possess an insecure attachment style.

Being a bully. Having personal experience as a bully and then being bullied may cause more distress than being a bully or target alone (Gradinger, Strohmeier, & Spiel, 2009). Smith et al. (2008) asked 92 individuals between the ages of 11-16 questions related to cyber-bullying. Results from Smith et al.'s study showed that 3.3% of those surveyed had also been a bully.

Unnever (2005) surveyed 926 middle school students and found that 206 of them were considered a bully-victim. This study showed that being bully-victims engaged in behavior that was significantly different from those students who were either bullies or victims alone (Unnever). Kowalski et al. (2008) reported that after surveying 3,767 students, 18% reported that they were bully-victims. Given that prior research has shown that being a bully is an important variable that may trigger differential effects due to bullying, the following hypothesis serves to establish the importance of being a bully in this project, which can then be used as evidence for its potential as a moderator in the model. Therefore the following hypothesis is proposed:

H4: Individuals who report being targets of cyber-bullying and report being a bully in the past will experience more secondary effects compared to individuals who report only being targets of cyber-bullying.

Mediators

As Figure 1 shows, when a significant relationship between an independent and dependent variable exists that depends on a third variable, it can be said that the third variable *mediates* the relationship between the two (Baron & Kenny, 1986). In other words, without the mediating variable, a relationship between the independent and dependent variable may not exist (see Figure 3, Panel A; Baron & Kenny). There are two types of mediation, complete and partial (Baron & Kenny). Baron and Kenny explain that in order for mediation to be considered complete: (a) it must be established that there is, in fact, an effect that can be mediated; (b) the initial variable must be correlated with the outcome; (c) the initial variable must be controlled;

and (d) the effect of *X* on *Y* controlling for *M* should be zero. If, however, the final criterion is not met, it is considered to be partial mediation (see *http://davidakenny.net*).

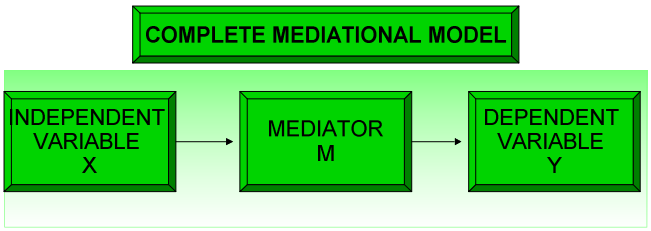

Figure 3, Panel A. Complete mediational model

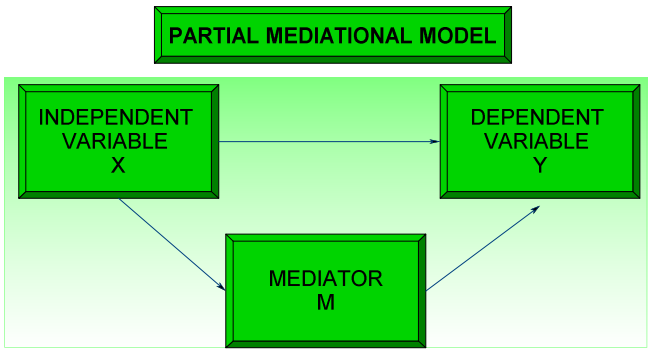

Figure 3, Panel B. Partial mediational model

In the case of cyber-bullying, the independent (or predictor) variable is exposure to a cyber-bullying message. The dependent (or outcome) variables are: emotional effects (anxiety and depression), academic effects (attendance and grades), and social effects (loneliness and peer rejection).

In order to examine the relationship between exposure to a cyber-bullying message and emotional, academic, and/or social effects using a mediator model, appraisals, mental representations, and self-discrepancy would be expected to mediate between message exposure and the outcome variables. For example, it is only because of possessing a discrepancy in one's self-concept that one may experience emotional effects such as anxiety or depression.

Potential Mediating Variables for the Effects of Bullying

Social Information Processing (SIP) model. Social cognitive theories attempt to explain how certain social and cognitive variables, such as cyber-bullying, affect how an individual understands their social world (Higgins, 2000). Socially aggressive external cues such as bullying-type behaviors demand the attention of the victim. Once these behaviors have been interpreted as negative and/or aggressive, mental representations of similar events are accessed and choices are made considering self and peers that will assist in creating a desired outcome goal. In this project, SIP will be operationalized through mental representations and appraisals both of which are relevant for the encoding and interpretation stages of the revised SIP model.

The SIP model (Dodge & Coie, 1986) has been used to understand better the cognitive processes that underlie a variety of social interactions, including adolescent social adjustment (Crick & Dodge, 1994), and has received attention for predicting successfully social adjustment in children. For example, Schultz and Shaw (2003) studied maladaptive social information processing in adolescent males due to early familial emotional climates; Cary (2004) observed male and female adolescent attitudes toward bullying and social aggression; and Patel (2008) researched adolescent social anxiety. These studies support the importance of how understanding the processing and interpretation of social cues among individuals can provide deeper insight into that individual's emotional responses (Graham & Juvonen, 2001).

Cyber-bullying involves adolescent and young adult's behavior and adjustment within social contexts. Therefore, the SIP model may offer valuable insight into how adolescents and young adults process the cyber-bullying situation and how this may affect their behavioral and emotional responses to such aggressive acts. This framework is well-suited to help understand how adolescents and young adults emotionally respond to the act of cyber-bullying.

According to the original SIP model (Dodge & Coie, 1986), prior to performing a social behavior, individuals will go through four mental steps. These steps include: a) encoding of the situational cue; b) interpretation of the situational cue; c) cognitive search for possible responses; and d) response selection. Several studies have used this model to assess social information processing variables, thus increasing its predictive power (Asher, Renshaw, & Geraci, 1980; Crick & Dodge, 1994; Shahinfar, Kupersmidt, & Matza, 2001).

In an effort to improve understanding of an individual's social adjustment issues, Crick and Dodge (1994) proposed a revised SIP model. The revised model includes the following five mental steps: (a) encoding of both external and internal cues; (b) interpretation of those cues; (c) selection of a goal; (d) response access or construction; (e) response decision; and (f) behavioral enactment. During the first two stages of encoding and interpretation, individuals attend to specific internal and external cues then proceed to interpret those cues. Interpretation of cues may include: (a) retrieval of mental representations of similar external cues that have been stored in long-term memory; (b) causal analysis of the events that occurred within the situation; (c) consideration of others' perspectives; (d) determination of any goal achievement; (e) consideration of outcome expectations and predictions of self-efficacy; and (f) self/peer evaluations. All interpretational cues are subject to influence of previous experiences stored in memory (Crick & Dodge). In order to measure how social information is processed effectively, thereby leading to emotional outcomes, the present study will operationalize social information processing through mental representations and appraisals both of which are relevant for the encoding and interpretation stages of the revised SIP model.

Mental representation. The first way SIP is operationalized is through mental representation. According to the revised SIP model, once an interpretation has been made,

individuals will then mentally create an outcome goal (e.g., maintain friendships and/or avoid ostracism), which are subject to revision as both external and internal cues change. In order to achieve the desired outcome, individuals will either access previous behaviors/strategies of coping that achieved a similar goal in the past, or create a new behavior/strategy of coping if the cues are unfamiliar (Crick & Dodge, 1994). This unfamiliarity of cues may create a fundamental heuristic of trial and error for the cyber-bullying target, thereby increasing the felt distress.

Prevention literature has not sufficiently addressed the issue of how to handle a cyber-bullying situation (Campfield, 2006; Willard, 2007). This limits the response choices available to a target of cyber-bullying. This may cause cyber-bullying targets to retrieve mental representations that are more similar to face-to-face bullying situations. This project's review of the current literature on cyber-bullying has indicated that it is indeed different from face-to-face bullying. It would stand to reason that response selection should also be different. This inaccessibility to proper response cues may contribute to a greater amount of emotional activation. Emotional activation may present as many emotions (e.g., guilt, grief, denial, or fear). Higgins (1987) developed a latent variable model relating the type of self-discrepancy to the kind of emotional problem, specifically social anxiety and depression. Therefore, for the present study, emotional activation will be examined by dividing it into two categories: depression and anxiety.

While face-to-face bullying has been discussed frequently in the literature as well as in schools, cyber-bullying is a phenomenon that has occurred fairly recently and has not been as extensively studied. Therefore, the availability of similar or familiar mental representations where cyber-bullying is concerned is also limited, thereby affecting the choices adolescents and young adults make regarding outcome goals. In other words, adolescents and young adults may

know how to deal with face-to-face bullies, but may be at a loss as to how to respond to a cyber-bully. Lazarus and Folkman (1986) suggest that when an individual feels they do not have sufficient resources, or mastery to deal with a challenge, stress increases. Denson, Spanovic, and Miller (2009) supports this assumption as well and explains that when a situation is perceived to be uncontrollable, novel, or challenging, stress will increase. The results from a study done by Camodeca et al. (2003) support the use of the revised SIP model to examine the subject of bullying.

To support the need for an investigation into cyber-bullying using the SIP model further, Dooley et al. (2009) explains:

> To date, no studies have examined SIP in relation to cyber-bullying. We are not suggesting that the patterns of information processing associated with cyber-bullying behavior will be totally distinct from what has been reported in relation to, for example, proactive aggression. However, given the media typically used to engage in cyber-bullying and that those who engage in cyber-bullying behaviors do not necessarily engage in face-to-face bullying, we suggest there may be some subtle differences between how information is processed in these interactions. For example, the expectation of positive outcomes after aggressive behavior (a finding primarily related to those who bully either getting people to do what they want or acquiring an object) may be the same for the cyberbully but, importantly, the goal toward which the behavior is directed may differ. If, as was suggested by Vandebosch and van Cleemput (2008), those who cyberbully others are more motivated by revenge then the explicit goal is to hurt rather than to dominate or to acquire. (p. 186)

Given that prior research has shown that mental representation is an important variable that may influence the effects due to bullying, the following hypotheses serve to establish the importance of mental representation in this project, which can then be used as evidence for its potential as a mediator in the model. Therefore the following hypotheses are proposed:

H5a: Individuals who are targets of cyber-bullying will report higher levels of unfamiliar mental representations regarding cyber-bullying experiences as compared to familiar mental representations.

H5b: Unfamiliar mental representations will account for variance in the set of cyber-bullying secondary effects variables.

Appraisals. The second way SIP is operationalized is via appraisals. Kinney and Porhola (2009) explain, "receiving various forms of anti-social communication elicits negative reactions" (p. 3). According to Dillard, Kinney, and Cruz (1996), an individual will experience an emotion that arises from a situation that is perceived. Once situation perception occurs, an individual will make a judgment about the situation. This appraisal of a perceived situation involves determining whether the situation has the potential to harm or benefit the individual. It has been suggested that appraisals as well as emotions mediate the effects stress has on one's health (Denson et al., 2009). Dillard et al. (1996) explain, "appraisals are not simply interpretations of the environment. Rather, they are judgments of the implications of the person-environment relationship for one's personal well-being and one's ability to cope with the event" (p. 106).

Appraisals can be categorized into a variety of dimensions. For the purposes of the present study, the following inventory of cognitive appraisals as listed by Dillard et al. (1996)

will be used: (a) attentional activity, (b) valence, (c) relevance, (d) predictability, (e) power, (f) legitimacy, (g) hurtfulness, (h) threat, and (i) hostility. Three additional appraisals have been added to this inventory, which include: (a) intentionality, (b) explicitness, and (c) dominance and will be tested for their contribution to the variability in emotional responses.

Dillard et al. (1996) state, an individual will juxtapose the environment with their own goals, desires, and motives. If these two variables are not congruent, cognitive discomfort may occur and negative emotions will arise. In the case of cyber-bullying, a target's environment is the social network the individual is a part of and the goal or desire of the target is to keep the individual view of the self (e.g. "I am popular", "I am loved") intact and supported. Higgins (2000) describes situations such as cyber-bullying as situational cues. Once these cues have been interpreted as discrepant with an individual's view of the self, cognitive discomfort may occur. This discomfort may lead to emotional, academic, or social distress.

Given that prior research has shown that appraisals are important variables that may influence the effects due to cyber-bullying, the following hypothesis serves to establish the importance of appraisals in this project, which can then be used as evidence for their potential as mediators in the model. Therefore the following hypothesis is proposed:

H6: Message appraisals will account for variance in the set of cyber-bullying secondary effects variables.

Self-Discrepancy. Higgins (2000) explains how social cognitive theories attempt to understand the effects social and cognitive variables have on how individuals understand their social world. While many social cognitive theories are able to offer explanations for the way individuals understand, interpret, and behave toward internal as well as external cues, Self-

Discrepancy theory (Higgins, 1987, 1989) offers a model that allows researchers to understand better how incompatible beliefs, specifically self-beliefs, create cognitive discomfort leading to potentially negative emotional or behavioral outcomes.

Adolescence and young adulthood brings about the capacity to represent a variety of perspectives regarding the self (Moretti, 1999). This capacity for many viewpoints brings about the development of an adolescent and young adult's true self as well as increases the risk for self-discrepancies (Moretti). According to Phillips and Silvia (2005), when levels of self-awareness are low, self-discrepancies have weak effects on emotions. However, when levels of self-awareness are high, discrepancies with how one views the self can bring about emotional distress. Adolescence and young adulthood are periods of time that contain particularly high levels of self-awareness (Prinstein et al., 2001).

A great deal of evidence supports Self-Discrepancy theory's usefulness in terms understanding the cognitive imbalance an individual experiences when faced with beliefs that conflict with core beliefs about the self (e.g., Beattie, Hardy, & Woodman, 2004; Heppen & Ogilvie, 2003; Szymanski, 1995). Self-Discrepancy theory describes three domains of the self: the *actual self* which includes attributes the individual believes to possess; the *ideal self* which includes attributes the individual would like to possess; and the *ought self* which includes attributes the individual feels obliged to possess. Each of the domains of the self may be perceived from either the standpoint of the individual or the standpoint of a significant other (i.e., peer, parent, co-worker, relative). Higgins (1987) has proposed that different combinations of what are termed self-guides, may produce different negative affective outcomes. For example, Actual/Own versus Ideal/Own is characterized by the individual's perception of attributes that are possessed versus the attributes that are desired. This combination of self-guides can produce

a disappointed or dissatisfied affective state in the individual. The basic assumption of this theory is that any discrepancy between the actual self and any other self-guides causes emotional discomfort that is sought to be reduced.

Higgins (1987) describes self-guides as follows:

> Combining each of the domains of the self with each of the standpoints on the self yields six basic types of self-state representations: actual/own, actual/other, ideal/own, ideal/other, ought/own, and ought/other. The first two self-state representations (particularly actual/own) constitute what is typically meant by a person's *self-concept* (see Wylie, 1979). The four remaining self-state representations are self-directive standards or acquired guides for being – in brief, *self-guides*. Self-discrepancy theory proposes that people differ as to which self-guide they are especially motivated to meet. Not everyone is expected to possess all of the self-guides – some may possess only ought self-guides, whereas others may possess only ideal self-guides. (p. 321)

While there are six different self-guide/self-state combinations, only discrepancy in the self-state between Actual-Self and Actual-Other are relevant in the study of acts of cyber-bullying due to the fact that this particular study is focused on the importance of self versus others. Adolescents and young adults may suffer due to the idea that who they believe themselves to be (actual-self) is something other than they believe significant others such as their peers believe them to be (actual-other) (Moretti, 1999) based on the cyber-bullying incident.

As mentioned previously, adolescents and young adults' increased capacity for multiple perspectives of the self increase the risk for greater discrepancy. An individual may hold a mental representation of the self that includes attributes such as high intelligence and/or

attractiveness. However, the standpoint of the "other" (the bully) may include a contradicting viewpoint that includes low intelligence and/or unattractiveness. According to Higgins (1987), Self-Discrepancy theory is the only theory that considers alternate standpoints other than self. This is important because Erikson (1959) states adolescents "are sometimes morbidly, often curiously, preoccupied with what they appear to be in the eyes of others as compared with what they feel they are and with the question of how to connect to earlier cultivated roles and skills with the ideal prototypes of the day" (p. 89).

Higgins (1987) summarizes the basic assumptions and implications of Self-Discrepancy theory by explaining, "the greater the magnitude and accessibility of a particular type of self-discrepancy possessed by an individual, the more the individual will suffer the kind of discomfort associated with that type of self-discrepancy" (pp. 335-336). While research has shown bullying causes the type of discomfort associated with that particular type of self-discrepancy, Willard (2007) suggests that cyber-bullying provides even greater emotional discomfort than face-to-face bullying because of its ability to reach a greater number of individuals. Due to the anonymous nature of cyber-bullying, oftentimes the victim does not know where the messages are coming from. This can create mistrust of not only one person, but many (Willard, 2007) also increasing the intensity of the level of discomfort.

While the SIP model suggests individuals who have been cyber-bullied may not have access to previous mental representations in order to respond effectively, Self-Discrepancy theory suggests cyber-bullying targets may experience input that conflicts with their core beliefs about the self. As this project's review of the literature has shown, cyber-bullying is more emotionally damaging than face-to-face bullying (Slonje & Smith, 2008; Smith et al. 2008), this

may be due to greater cognitive discomfort, which may also lead to greater negative emotional outcomes.

Higgins (1987) suggests that the greater accessibility of self-discrepancy, the more discomfort the individual will experience. Therefore, due to the large numbers of individuals who may have access to negative messages and may be involved in cyber-bullying, accessibility may also be increased, thereby increasing the discomfort on the part of the target. Given that prior research has shown that self-discrepancy is an important variable that may influence the effects due to bullying, the following hypothesis serves to establish the importance of self-discrepancy in this project, which can then be used as evidence for its potential as a mediator in the model. Therefore, the following hypothesis is proposed:

H7: Self-discrepancy will account for variance in the set of cyber-bullying secondary effects variables.

Higgins (1991) also suggests that females are socialized differently from males. Moretti (1999) suggests that one consequence of this socialization difference is that females may develop stronger Self-Other contingencies than males (see Higgins, 1987). Moretti found that male adolescents moved away from their parent's guides more often than female adolescents. Given that prior research has shown that self-discrepancy is an important variable that may influence the effects due to bullying. Therefore, the following hypothesis is presented:

H8: Females who report being targets of cyber-bullying will experience greater Actual-Self and Actual-Other self-guides discrepancy than male targets of cyber-bullying.

Testing the Overall Model: Moderated Mediation

A moderating/mediating model will be utilized in this study (see Figure 1). The set of moderating variables such as biological sex, attachment style, and being a bully will be examined in this study in order to determine whether or not they increase or decrease the strength of the relationship between exposure to a cyber-bullying message and the outcome variables. The set of mediating variables such as appraisals, mental representations, and self-discrepancy will be examined in order to determine whether or not they have a direct influence on the outcome variables (emotional, academic, and social effects).

Preacher and Hayes (2007) discuss the idea of moderated mediation, which is defined as "occurring when the size of an indirect effect is contingent on the level or value of a moderator variable" (p. 31). Preacher and Hayes go on to state, "a process can be described as moderated mediation if the size of the indirect effect of the putative cause on the outcome through the mediator varies as a function of the moderator variable(s)" (p. 32). In other words, where *X* is exposure to a cyber-bullying message and *Y* is an outcome variable such as anxiety, and *W* is a mediating variable such as self-discrepancy, if the size of self-discrepancy (*W*) varies because of

a moderating variable (Z) such as gender, then it can be said moderated mediation has occurred (see Figure 4).

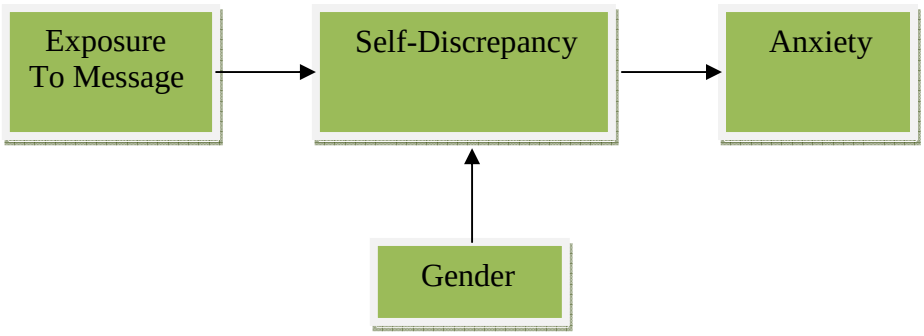

Figure 4. Moderated mediation model

Preacher and Hayes (2007) explain:

> Although communication researchers routinely employ regression and analysis of variance to test hypotheses about moderation, rarely are tests of whether indirect effects vary as a function of one or more moderator variables formally conducted, even though intuition suggests that such moderated mediation is probably a fairly common phenomenon in communication processes both empirically and theoretically. (p. 32)

According to the moderator/mediator model, the set of moderator variables (biological

sex, attachment style, and being a bully) may predict one or all primary effects variables (appraisals, mental representations, and self-discrepancy) (see Figure 5).

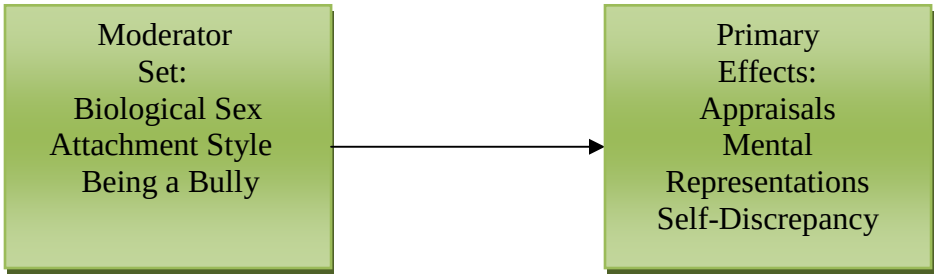

Figure 5. Moderator set test model

According to the moderator/mediator model, the set of moderator variables (biological sex, attachment style, and being a bully) may predict one or all secondary effects variables (emotional: anxiety, depression; social: loneliness, peer rejection; academic: absences, and grades) (see Figure 6).

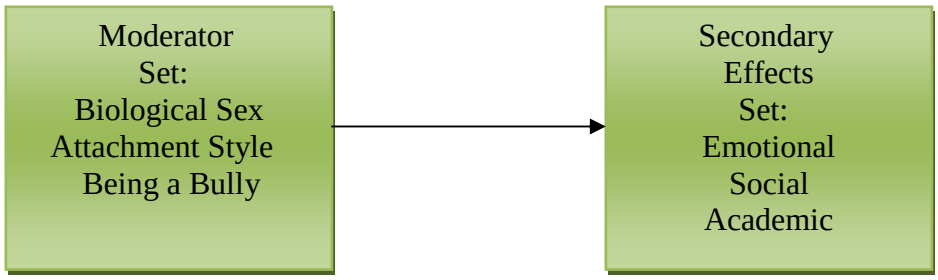

Figure 6. Moderator set test model

Therefore, in order to test directly the components of the moderator/mediator model independently, the following hypotheses are proposed:

H9(a): The set of variables that potentially moderate the relationship between exposure to and processing of cyber-bullying messages will account for variance in the set of cyber-bullying primary effects variables.

H9(b): The set of variables that potentially moderate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying secondary effects variables.

According to the moderator/mediator model, the set of mediator variables (appraisals, mental representations, and self-discrepancy) may predict one or more secondary effects variables (emotional effects: anxiety, depression; academic effects: loneliness, peer rejection; and social effects: absences and grades) (see Figure 6).

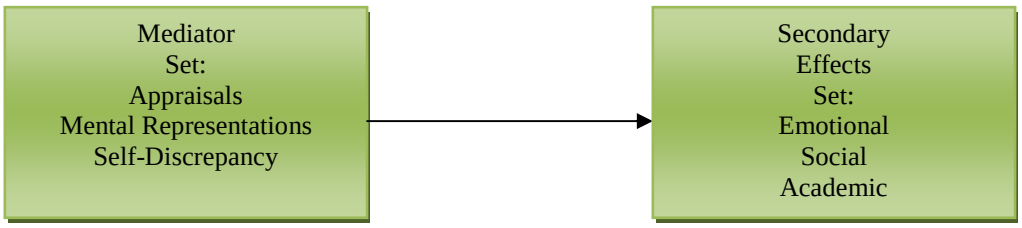

Figure 7. Mediator set test model

Therefore, in order to test another component of the moderator/mediator model, the following hypothesis is proposed:

H10: The set of variables that potentially mediate the relationship between exposure to and processing of cyber-bullying messages will account for variance in the set of cyber-bullying secondary effects variables.

CHAPTER III

Method

One purpose of this study was to examine the primary (appraisals, mental representations, and self-discrepancy) and secondary effects (emotional, social, and academic) of cyber-bullying. A second purpose was to garner support for the moderator/mediator model advanced in Figure 1. The final purpose for this study was to test the moderator/mediator model for its theoretical and practical value in terms of being able to reflect the psychological process individuals move through after being exposed to a cyber-bullying message, and how this process accounts for emotional, social, and academic effects experienced.

This cross-sectional study used self-report surveys to collect necessary data. In order to receive data surrounding personal cyber-bullying experiences of the individual, a survey design was optimal. The survey was structured to gather information that would allow adequate testing of the moderator/mediator model (see Figure 1). The survey was comprised of assessment tools that measured moderators (being a bully, biological sex, and attachment style), mediators (appraisals, self-discrepancy, and mental representations), and secondary effects (anxiety, depression, loneliness, peer rejection, absences, and grades).

Participants

The present study includes a convenience sample of college students enrolled in communication classes at two universities located in the Midwest as well as adults who participated through word of mouth (N = 577: male, n = 200; female, n = 377). Demographic analyses show that the majority of the participants were in their first year of college (n = 146; 25.3%), European American/White (n = 270; 46.2%), and the age range of participants was 17 - 55, with a mean of 22. The survey set was split across two themes: face-to-face bullying (n =

299) and cyber-bullying (n = 208). Only participants who completed the cyber-bullying survey set (male, n = 68; female, n = 139) are examined in the following analyses. Following IRB approval, participants were recruited by the Principal Investigator by distributing recruitment packets to instructors who volunteered to present the survey packet to their students. In the classroom, the instructor provided an opportunity for volunteer student participation and details pertaining to the study were explained. A small amount of extra credit or a $15 gift card was offered for participants time and inconvenience. Students who wanted the extra credit but who did not wish to participate in the research were allowed to select two 10 page or less articles on cyber-bullying, read and summarize them in no less than four written pages. Participants had the option of completing the survey online, which would take approximately 45 minutes to complete, or completing a paper-and-pencil survey.

Procedures

Prior to completion of the survey, participants were asked to complete a Research Information Sheet (see Appendix A) and instructed that participation is voluntary and that they may choose to stop participation at any time during the study. Participants were then instructed to complete a survey packet that contains a collection of measurement tools developed to examine antecedents, moderating/mediating variables, and primary/secondary outcomes of cyber-bullying as outlined in Figure 1.

A screening sheet (see Appendix B, p. 133) provided a definition of cyber-bullying and asked participants if they have been cyber-bullied. If the participant answered “yes”, they were instructed to move forward and complete the packet of questionnaires.

The cyber-bullying survey was designed for participant anonymity. The participants who completed the study received confirmation that could be given to their instructor directly in order to receive any extra credit provided.

The survey packet was made up of a combination of well-established tools that possess strong psychometric properties that have been modified slightly for this study and a modified general questionnaire that contains items specifically designed for this project. Modifications include slight word changes to fit the themes of the study. The survey packet also included a *Cyber-bullying Target Scale*, which was designed specifically for this study. Surveys designed to measure the moderating and mediating variables as well as the outcomes were included in the packet and are listed below with a description of the self-report measure(s).

Measures

Demographic information. A demographic information sheet is included in the survey packet and collected data such as: age, ethnicity, sex, and year in college (see Appendix B, p. 131).

General Cyber-bullying Questionnaire. Although there is not extensive research into the area of cyber-bullying, several existing cyber-bullying questionnaires were consulted in the creation of the questionnaire used in this study.

The *Internet Experiences Questionnaire* which was designed by Raskauskas and Stoltz (2007) was intended to identify the relationship between electronic bullying and victimization and face-to-face bullying and victimization. This questionnaire includes 28 self-report items asking students how often they had experienced each of the different types of face-to-face and cyber-bullying. Similar to the questionnaire designed by Raskauskas and Stoltz (2007), an open-

ended exploratory section is included in this present study in order to increase the understanding of cyber-bullying (see Appendix B, p. 139).

Kowalski and Limber (2007) studied electronic bullying among middle school students. Demographic information such as gender and ethnicity was incorporated into Olweus' 39-item *Bully/Victim Questionnaire* and also included an additional 23-item questionnaire designed by the researchers to inquire specifically about electronic bullying. After giving participants a clear definition of cyber-bullying, this questionnaire assessed students as either victim or perpetrator and asked questions such as: "*how often the student had been bullied electronically in the past couple of months*"; and "*how often the student had bullied someone else electronically in the past couple of months*". Other questions included: "*through what medium did the electronic bullying occur, and by whom they were electronically bullied*".

The original bully/victim questionnaire was designed by Olweus (1994) and consists of 40 questions intended to measure bully/victim problems such as:

> exposure to various physical, verbal, indirect, racial, or sexual forms of bullying/harassment, various forms of bullying other students, where the bullying occurs, pro-bully and pro-victim attitudes, and the extent to which the social environment (teachers, peers, parents) is informed about and reacts to the bullying. (see http://vinst.umdnj.edu)

Olweus' (1994) original questionnaire has established construct and discriminate validity (Solberg & Olweus, 2003). Internal consistency reliabilities (Cronbach's alpha) have yielded $\alpha = .80$ or higher (Olweus, 2000); construct validity was established between the "degree of victimization and variables such as (self-reports of) depression, poor self-esteem and peer rejection" (Olweus, 2000, p. 9), with correlations ranging from $r = .60$-$.70$.

Smith, Mahdavi, Carvalho, and Tippett (2006) designed a cyber-bullying questionnaire that also followed, in part, the structure of Olweus' (1996) Bully/victim questionnaire. This questionnaire includes various channels of cyber-bullying such as: text messaging, cell phone calls, computer instant messaging, chat-rooms, and picture/video-clips. Slonje and Smith (2008) also used this questionnaire in their study that examined four categories of cyber-bullying (text message, email, phone call, and picture/video clip) in relation to age and gender, perceived impact, telling someone, and perception of adult awareness of cyber-bullying.

The questionnaire designed by Smith et al. (2006) was used primarily as a foundation for the questionnaire created for the present study. Questions were modified for appropriate usage among college-aged students (See Appendix B, p. 139).

In the present study, participants are asked to recall and describe what happened when they were cyber-bullied. Specific details are requested and numbered spaces are provided for participants to list the salient factors that occurred in the cyber-bullying incident (see Appendix B). Once participants recall one specific cyber-bullying event, and one specific bully, they are prompted throughout the remainder of the questionnaire to reflect back on this event/person.

Following the message content portion of the questionnaire, participants are guided through a 21-item cognitive appraisal section (see Appendix B, p. 134). The internal consistency reliability for this scale in this study was $\alpha = .90$. In order to measure appraisals as a mediating factor, appraisal items taken from Dillard, Kinney and Cruz (1996) were modified slightly by changing some of the words for the purposes and themes of this study. The items ask participants to consider the message specifically and note their response on a seven-point Likert scale ranging from "*Strongly Agree*" to "*Strongly Disagree*". Dillard et al. (1996) report reliability scores for the factors used in the present study ranging from $\alpha = .63$ to .91. Sample items include: "*The*

message I received made me give all my attention to the speaker" (1 = Strongly Disagree; 7 = Strongly Agree); and "*The message I received was enjoyable*" (1 = Strongly Disagree; 7 = Strongly Agree).

Nansel et al. (2001) found that targets of face-to-face bullying reported difficulty making friends and poor relationships with classmates. Their study asked questions regarding perceived school climate; relationship with classmates; and ease of friendship making. Therefore, participants are asked who did the bullying (friend, boy/girlfriend, acquaintance, stranger); where the bullying occurred (e.g., school, work, home); and when the bullying occurred (e.g., in school/out of school).

Following the *General Cyber-bullying Questionnaire*, participants were asked to complete the *Cyber-bullying Target Scale*, which was designed for this study. Moderating variables such as biological sex, attachment style, and being a bully; mediating variables such as appraisals and emotional and social outcomes were also measured in this section.

Cyber-bullying Target Scale. Participants were asked to complete a *Cyber-bullying Target Scale*, which was designed for this study and has been shown to have good reliability (α = .84) (see Appendix B, p. 143). Sample self-report items include: "*In the past, I have been cyber-bullied a lot*"; "*In the past, I think that I have been cyber-bullied a great deal*". Participants were asked to note their response on a seven-point Likert scale ranging from 1 = "*Very Strongly Agree*" to 7 = "*Very Strongly Disagree*".

Moderating Variables

Several standardized measurement tools were utilized to test for cyber-bullying effects. Variables such as biological sex, being a bully, attachment style, and being a bully were

measured to determine to what degree, if any, they moderate the relationship between exposure to the bullying message and outcomes (emotional, academic, and social).

Biological sex. Participants were asked to complete a demographics section (see Appendix B), which specifically asked the individual to indicate biological sex.

Attachment style. Shapiro and Levendosky (1999) studied the role of attachment style and coping in adolescent survivors of childhood sexual abuse. In order to measure attachment styles in adolescents, they used the *Adult Attachment Scale* (AAS, Modified version; Collins & Read, 1990), which was based on the Hazen and Shaver (1987) model (see Appendix B, p. 153).

The AAS is a questionnaire that contains 18 items in which participants rate how true each statement is regarding their feelings on a seven-point Likert-type scale. This scale ranges from 1 = "*Not at all characteristic of me*" to 7 = "*Very much characteristic of me.*" Participants received scores for three attachment styles: Secure (S), Anxious-Avoidant (AV), and Anxious-Resistant (AR). Sample self-report items included: *"I find it difficult to allow myself to depend on others*" (AV); "*I often worry that my partner does not really love me*" (AR); and "*I am comfortable depending on others*" (S) (items taken from *http://www.richardatkins.co.uk*).

Garbarino (1996) examined the psychometric properties of the AAS and found Cronbach alpha score between $\alpha = .69$ and $\alpha = .75$. Chongruska, (1996) tested 283 college students and found strong support for the reliability and validity of the AAS. Coefficient alpha scores ranged from $\alpha = .78$ to $\alpha = .85$.

The original *Adult Attachment Questionnaire*, which was modified in 1990 (Hazen & Shaver, 1987, p. 515) appeared as follows: Secure: ***"****I find it relatively easy to get close to others and am comfortable depending on them*". "*I don't often worry about being abandoned or about someone getting too close to me*"; Avoidant: "*I am somewhat uncomfortable being close to*

others", "*I find it difficult to trust them completely, difficult to allow myself to depend on them*", "*I am nervous when anyone gets too close, and often, love partners want me to be more intimate than I feel comfortable being*"; Anxious: "*I find that others are reluctant to get as close as I would like*", "*I often worry that my partner doesn't really love me or won't want to stay with me*", "*I want to get very close to my partner, and this sometimes scares people away*".

Participants completed the AAS (Collins & Read, 1990) that was modified by including slight changes to the words to fit the needs and the themes of this study (see Appendix B, p. 153). The internal consistency reliability for this scale in this study was $\alpha = .89$. Participants were asked to recall the bullying message listed in the general questionnaire and asked a series of questions that pertain to how the participant felt at the time they received the bullying messages.

Being a bully. Being a bully was measured in the *General Cyber-bullying Questionnaire* (see Appendix B, 139). Smith et al. (2008) included questions in their general questionnaire, which was followed, in part, for the present study. "*Have you ever cyber-bullied someone else*", "*How many people have you cyber-bullied*", and "*Where did you know the person you cyber-bullied from*"? are questions that were included for the present study in the *General Cyber-bullying Questionnaire*.

Mediating Variables

Social information processing. Camodeca, Goossens, Schuengel, and Terwogt (2003) studied the links between social information processing in middle childhood and their involvement in bullying behaviors. In order to measure social information processing, Camodeca, et al. used two different instruments. Provocation scenarios were distributed and responses assessed in the spring of 1998 (T1) while ambiguous scenarios were distributed and responses assessed one year later in the spring of 1999 (T2). The T1 assessment contained six

provocation scenarios in which respondents provided solutions to a variety of bullying situations. The T2 assessment used four ambiguous scenarios for the attributions of intentions and emotions. In both assessments, the respondent imagined themselves to be the victim. Three questions were asked for each scenario in T1: "*Suppose this happens to you*: (a) *What would you do*?; (b) *What else could you do*?; and (c) *What do you think is the best thing to do*? "

The study conducted by Camodeca et al. (2003) measured provocation situations and involvement in bullying and the present study followed this design, in part. Participants for the present study were asked to recall a cyber-bullying event, where they were a target (see Appendix B, p. 133).

In order to test whether or not the target has limited mental representations of similar past external cues, the present survey asked the participant questions within the *General Cyber-bullying Questionnaire* such as: "*When did you realize you were being bullied/cyber-bullied*"; "*Have you known or heard of someone who has been bullied/cyber-bullied*"; and "*Did you know of someone who had a similar experience*"? Participants were asked to respond to questions such as "*When did you realize you were being bullied*?" by using options such as: 1 = *after message 2-3*; and 2 = *after message 4 or more* (see Appendix B, p. 139).

To measure appraisals, the following inventory of cognitive appraisals as listed by Dillard et al. (1996) was used: (a) attentional activity, (b) valence, (c) relevance, (d) predictability, (e) power, and (f) legitimacy. Six additional appraisals were added to the inventory used for this study, which include: (a) intentionality, (b) explicitness, (c) dominance (d) hostility, (e) hurtfulness, and (f) threat and were tested for their contribution to the variability in emotional responses. Participants were asked to respond to a series of statements such as, "*The messages I received made me want to direct my attention to the sender*" by selecting the

appropriate response on a seven-point Likert scale (see Appendix B, p. 134). The internal consistency reliability for this scale in this study was α = .90.

Self-discrepancy. Roelofs et al. (2006) utilized *Miskimins Self-Goal Other Discrepancy Scale* (MSGO; Miskimins & Braucht, 1971), which is a 15-item measure of self-discrepancy. This scale is designed to tap into Actual-ideal, Actual-ought, and Actual-feared discrepancies. This assessment tool provides the opportunity to compare the difference between participants' self-evaluation and the perceived evaluation of others. In addition, Jong (2001) utilized the MSGO to test social anxiety and self-esteem. According to Jong, the MSGO was optimal for the study because it allows researchers to compare the difference between participants' self-evaluation and perceived evaluations of others, thus measuring the level of discrepancy. The MSGO has established validity and reliability (Miskimins & Braucht, 1971). Buck et al. (2008) found the MSGO a valid instrument to use with college students and Arntz et al. (2003) showed reliability scores of α = .86 - .89.

The current scale was designed with 21 items. Participants were asked to select their response on a seven-point Likert scale. The self-discrepancy scale for Actual Behaviors modified by including slight word changes for this study includes items such as: I believe I am (1 = *Very Intelligent*; 3 = *Somewhat Intelligent*; 5 = *Somewhat Ignorant*; 7 = *Ignorant*) (see Appendix B, p. 145). The internal consistency reliability for this scale in this study was α = .91. The present study modified this scale slightly to include a semantic differential scale listing two bipolar adjectives such as "Intelligent – Ignorant". Each item has seven points between each adjective for the participant to select from. The self-discrepancy scale for Actual Others has also been modified for this study from (1 = *Very Moral*; 3 = *Somewhat Moral*; 5 = *Somewhat Immoral*; 7 = *Immoral*) and now incorporates the semantic differential scale with items such as: I believe the bully thinks I

am: “Moral – Immoral” also including seven points between each adjective for the participant to select from (see Appendix B, p. 148). The internal consistency reliability for this scale in this study was α = .97.

Secondary Effects Variables

Anxiety. Biggam and Power (1999) examined the social problem-solving skills and the levels of psychological distress among bullies and victims of bullying. Participants were young males between the ages of 16 and 21 who were incarcerated in the Scottish Young Offender Institution. In order to examine the relationship between problem solving and psychological adjustment, Biggam and Power (1999) utilized the *Hospital Anxiety and Depression Scale* (HADS; Zigmond & Snaith, 1983). This is a self-administered 14-item questionnaire that measures both anxiety and depression and their level of severity. The HADS has been used in a variety of settings, such as: hospitals, physicians’ offices, and community settings. A sample of questions used include: “*I feel tense or ‘wound up’*”; “*I still enjoy the things I used to enjoy*”; and “*I get a sort of frightened feeling as if something awful about to happen”*. The HADS items are measured on a four-point Likert scale ranging from 0 = *Strongly Disagree* to 3 = *Strongly Agree*. The subscales for depression and anxiety are comprised of seven items each that, when combined, offer scores that range from 0 to 21. Higher scores indicate greater levels of either depression and/or anxiety.

Bjelland, Dahl, Haug, and Neckelmann (2001) specifically examined the validity of the HADS. After reviewing 747 research papers that had used the HADS to measure anxiety and depression, they concluded that the HADS performed well measuring the severity and caseness (the possibility and probability) of depression and anxiety in both a clinical setting as well as the general population. Cronbach’s alpha varied from α = .68 to α = .93 (mean α = .83) for the

anxiety portion of the HADS, and from α = .67 to α = .90 (mean α = .82) for the depression portion. The present study used the HADS which was modified by changing the questions to relate to the time shortly after the participant received the bullying message to measure anxiety and depression (see Appendix B, p. 156). The internal consistency reliability for this scale in this study was α = .92.

The present study also included a method used by Ybarra et al. (2004) to measure depression by asking participants to recall the effects cyber-bullying had on them after the incident. A "*yes/no*" format was used to assess whether or not the participant experienced any of the following six symptoms: restlessness or feeling keyed up or on edge; being easily fatigued; difficulty concentrating or mind going blank; irritability; muscle tension; sleep disturbance. (DSM-IV, p. 476)

It is important to note that the presence of these symptoms that have been used in previous studies as well as the present study are not meant to be a clinical diagnosis of Generalized Anxiety Disorder. These symptoms are only one criterion of six listed criteria in the DSM-IV (p. 476). Presence of at least three or more of these symptoms are only intended to indicate a tendency for anxiety (see Appendix B, p. 158). The internal consistency reliability for this scale in this study was α = .86.

Depression. Ybarra (2004) performed a study linking depressive symptomatology and Internet harassment among young Internet users. Ybarra (2004) used the Diagnostic Statistical Manual – IV (DSM-IV) to determine the symptoms associated with depression. Nine variables representing the symptoms listed in the DSM-IV were used in Ybarra's (2004) study to measure depression. Participants were requested to answer either "*yes*" or "*no*" to whether or not they had experienced each of the nine symptoms. Three additional questions were asked about the effect

these symptoms had on personal life, schoolwork, and feelings of self-efficacy. Ybarra (2004) measured peer relationships while studying the link between depression and Internet harassment. Two categories of peer relationships were created. In the first category, participants were asked to estimate the number of close friends they had on a continuous scale of 0-11. The second category asked participants to indicate the average number of times per week they spent time with friends, which was dichotomized at the sample mean (4 or more days per week versus fewer).

The present study followed the method used by Ybarra et al. (2004) and measured depression by asking participants to recall the effects cyber-bullying had on them shortly after the incident. A "*yes/no*" format was also used to assess whether or not the participant experienced any of the following eight symptoms: depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful); markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others); significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day; insomnia or hypersomnia nearly every day; psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down); fatigue or loss of energy nearly every day; feelings of worthlessness or excessive or inappropriate guilt nearly every day; diminished ability to think or concentrate or indecisiveness nearly every day. (DSM-IV, p. 356)

A ninth symptom related to suicidal ideations is included in the DSM-IV however is not included in this measurement for this study. It is also important to note that the presence of these

symptoms that have been used in previous studies as well as the present study are not meant to be a clinical diagnosis of a Major Depressive Episode. These symptoms are only one criterion of five listed criteria in the DSM-IV (p. 356). Presence of at least five or more of these symptoms are only intended to indicate a presence of depressive tendencies (see Appendix B, p. 159). The internal consistency reliability for this scale in this study was $\alpha = .90$.

Attendance and grades. Nansel et al. (2001) measured truancy by asking one question about school attendance and academic achievement, measured by inquiring about perceived school performance. Patchin and Hinduja (2006) utilized participants who included college-aged individuals. In order to determine whether or not cyber-bullying affected them academically, they were asked to answer "*yes*" or "*no*" to the simple question, "*It affected me at school*." Therefore, participants in this study were asked to recall whether or not their grades dropped or their attendance was affected during the time they were bullied. This study asked the following question in the *General Cyber-bullying Questionnaire* to determine a drop in attendance: "*If you were attending school when the cyber-bullying occurred, did the bullying affect your* ***attendance****?*" Response choices include: "*Yes, absences increased*" and "*No, absences did not increase*". This study asked the following question to determine a drop in grades: "*If you were attending school when the cyber-bullying occurred, did the bullying affect your* ***grades****?"* Response choices include: "*Yes, my grades dropped*" and "*No, my grades did not drop*" (see Appendix B, p. 139).

Loneliness. Steven Asher (1985) created a scale to measure children's feelings of loneliness. The *Children's Loneliness questionnaire* (CLQ) has 16 primary items with eight "filler" items created to make the child feel more at ease. The CLQ has excellent internal consistency, with an alpha of $\alpha = .90$ for the 16 primary items. The questions included are similar

to the CLQ were included in this study, modified to be appropriate for a college-aged adolescent or young adults (See Appendix B, p. 160). The internal consistency reliability for this scale in this study was α = .95.

The present scale was modified and asked participants to answer the questions based on their recollection of the time shortly after they received the bullying messages. Sample items include: Shortly after I received the message, it was hard for me to make friends (1 = *Very Strongly Disagree*; 2 = *Strongly Disagree*; 3 = *Mildly Disagree*; 4 = *Neutral*; 5 = *Mildly Agree*; 6 = *Strongly Agree*; 7 = *Strongly Agree*).

In addition, Russell, Peplau, and Cutrona (1980) designed a scale to measure loneliness. It has become the "most common instrument used by researchers in assessing feelings of loneliness" (Oshagan & Allen, 1992, p. 2319). Oshagan and Allen state that while this scale is not unidimensional, it is highly reliable with an alpha of α = .91 reported in a study done by Hughes, Waite, Hawkley, and Cacioppo (2004). The *UCLA Loneliness Scale* was included in this survey and asked participants to respond to statements such as, "*Shortly after I was bullied, I felt in tune with the people around me*" (1 = *Very Strongly Disagree*; 2 = *Strongly Disagree*; 3 = *Mildly Disagree*; 4 = *Neutral*; 5 = *Mildly Agree*; 6 = *Strongly Agree*; 7 = *Strongly Agree*) (see Appendix B, p. 162). The internal consistency reliability for this scale in this study was α = .95

Peer Rejection. Peer rejection was measured by using the *Multidimensional Scale of Perceived Social Support* (MSPSS) created by Zimet, Dahlem, Zimet, and Farley (1988). The MSPSS was used to measure perceived social support from three sources: family, friends, and a significant other. According to Fischer and Cocoran (2007), the MSPSS has good construct validity and excellent internal consistency, with α =.91 for the total scale and .90 and .95 for the subscales. Vieno, Lenzi, and Mirandola (2009) utilized this scale to measure such items as social

support and bullying victimization among immigrants and native adolescents in Italy. The scale included items such as: ‘‘*I can tell my friend about my problems and troubles*’’. The 12-item MSPSS scale was modified slightly for use in the present study (see Appendix B, p. 151). Participants were asked to recall the timeframe when they received the bullying message and respond by selecting the appropriate response on a seven-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). The internal consistency reliability for this scale in this study was $\alpha = .90$.

Testing the Model

In order to test the Moderator/Mediator model (see Figure 1), the set of moderator variables (biological sex, attachment style, and being a bully) were used to examine if any or all of these predict the mediators (appraisals, mental representations, and self-discrepancy and the outcome variables). A hierarchical regression analysis was used to analyze the data.

In addition, the set of mediator variables (appraisals, mental representations, and self-discrepancy) was used to examine if any or all of these predict the secondary outcome variables (emotional, academic, and social). A hierarchical regression analysis was used to analyze the data.

Baron and Kenny (1986) and Judd and Kenny (1981) discuss four steps in order to establish mediation (see *http://davidakenny.net*):

> Step 1: Show that the initial variable is correlated with the outcome. Use Y as the criterion variable in a regression equation and X as a predictor (estimate and test path c). This step establishes that there is an effect that may be mediated.

Step 2: Show that the initial variable is correlated with the mediator. Use M as the criterion variable in the regression equation and X as a predictor (estimate and test path a). This step essentially involves treating the mediator as if it were an outcome variable.

Step 3: Show that the mediator affects the outcome variable. Use Y as the criterion variable in a regression equation and X and M as predictors (estimate and test path b). It is not sufficient just to correlate the mediator with the outcome; the mediator and the outcome may be correlated because they are both caused by the initial variable X. Thus, the initial variable must be controlled in establishing the effect of the mediator on the outcome.

Step 4: To establish that M completely mediates the X-Y relationship, the effect of X on Y controlling for M (path c') should be zero. The effects in both Steps 3 and 4 are estimated in the same equation.

If all four of these steps are met, then the data are consistent with the hypothesis that variable M *completely* mediates the X-Y relationship, and if the first three steps are met but the Step 4 is not, then *partial* mediation is indicated. Meeting these steps does not, however, conclusively establish that mediation has occurred because there are other (perhaps less plausible) models that are consistent with the data. Some of these models are considered later in the Specification Error section. (see http://davidakenny.net)

Overall, the present study sought to examine how a cyber-bullying message affects an adolescent or young adult. The packet of measurement tools used in this study were created to measure specific effects (emotional, academic, and social), as well as moderating and mediating variables.

CHAPTER IV

Results

Demographics

Data were collected from college students enrolled in communication classes and word of mouth at two large universities in the Midwest (N = 577: male, n = 200; female, n = 377). Demographic analyses show that the majority of the participants were in their first year of college (n = 146; 25.3%), European American/White (n = 270; 46.2%), and the age range of participants was 17 - 55, with a mean of 22. The survey set was split across two themes: face-to-face bullying (n = 299) and cyber-bullying (n = 208). Only participants who completed the cyber-bullying survey set (male, n = 68; female, n = 139) are examined in the following analyses. See Table C1 for detailed information.

Testing the Hypotheses

This project advances the moderator/mediator model (see Figure 1) that illustrates the process of cyber-bullying. The model shows that a set of moderators and a set of mediators are associated with primary and secondary effects such as: emotional, social, and academic consequences from being cyber-bullied. The model was tested incrementally through the following hypotheses using t-test, correlations, chi-square, and regression analyses. Following are the tests of the hypotheses that were advanced through this project.

Hypothesis 1(a): Being the target of cyber-bullying will be correlated positively with anxiety and depression.

As the model in Figure 1 shows, we hypothesized that being the target of cyber-bullying would be correlated positively with emotional effects (anxiety and depression). Anxiety was tested using two measures: HADS Scale and the DSM-IV checklist for anxiety. Depression was

tested using two measures as well: HADS Scale and the DSM-IV checklist for depression. The results were analyzed using a two-tailed, Pearson correlation.

HADS Anxiety. As Table C2 shows, a positive relationship was found between anxiety and four of the five measures of being the target of cyber-bullying (*Cyber-bullying Target Scale*: $r(173) = .35$, $p < .001$; "*How often have you been cyber-bullied in the past*?": $r(178) = .23$, $p < .01$; "*By how many individuals have you been cyber-bullied?*": $r(163) = .18$, $p < .05$; "*Please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others*": $r(177) = .29$, $p < .001$).

DSM-IV Checklist for Anxiety. As Table C2 shows, a positive relationship was found between anxiety and one of the five measures of being the target of cyber-bullying ("*Please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others*": $r(175) = .23$, $p < .01$).

HADS Depression. As Table C2 shows, a positive relationship was found between depression and one of the five measures of being the target of cyber-bullying (*Cyber-bullying Target Scale*: $r(175) = .35$, $p < .001$).

DSM-IV Checklist for Depression. As Table C2 shows, a positive relationship was found between depression and one of the five measures of being the target of cyber-bullying ("*How often have you been cyber-bullied in the past?"*: $r(180) = .19$, $p < .01$; "*Please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others*": $r(179) = .25$, $p < .001$).

The overall results show that 40% of the tests for H1(a) were significant. Thus, H1(a) was partially supported. See Table C2 for details.

Hypothesis 1(b): Being the target of cyber-bullying will be correlated positively with absences and negatively with grades.

As the model in Figure 1 shows, we hypothesized that being the target of cyber-bullying would be associated with academic effects, positively with absences and negatively with grades. Absences were measured by asking participants one question, "*If you were attending school when the cyber-bullying occurred, did the bullying affect your attendance*"? (1 = yes, 2 = no). Grades were measured by asking participants one question, "*If you were attending school when the cyber-bullying occurred, did the bullying affect your grades*"? (1 = yes, 2 = no). The results were analyzed using a two-tailed, Spearman rho correlation.

Absences. As Table C3 shows, a positive relationship was found between absences and two of the five being the target of cyber-bullying measures ("*How often have you been cyber-bullied in the past?*": $r(190) = .16$, $p < .05$; "*Please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others"*: $r(189) = .18$, $p < .05$).

Grades. As Table C3 shows, a negative relationship was found between grades and three of the five measures of being the target of cyber-bullying (Cyber-bullying Target Scale: $r(182) = -.16$, $p < .05$; How often have you been cyber-bullied in the past?: $r(190) = -.14$, $p < .05$; Please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others: $r(189) = -.23$, $p < .01$).

The results show that 50% of the tests for H1(b) were significant. Thus, H1(b) was partially supported. See Table C3 for details.

Hypothesis 1(c): Being the target of cyber-bullying will be correlated positively with loneliness and peer rejection.

As the model in Figure 1 shows, we hypothesized that being the target of cyber-bullying would be correlated positively with social effects (loneliness and peer rejection). Loneliness was tested using two measures: *CLQ* and the *UCLA Loneliness Scale*. Peer Rejection was tested using the *Multi-dimensional Scale for Perceived Social Support*. The data were analyzed using a two-tailed, Pearson correlation.

CLQ. A positive relationship was found between loneliness and three of the five being the target of cyber-bullying measures (*Cyber-bullying Target Scale*: $r(166) = .66$, $p < .001$; "*How often have you been cyber-bullied in the past*?": $r(170) = .23$, ; $p < .05$ "*By how many individuals have you been cyber-bullied*?": $r(169) = .28$, $p < .01$).

UCLA Loneliness Scale. A positive relationship was found between loneliness and three of the five being the target of cyber-bullying measures (*Cyber-bullying Target Scale*: $r(166) = .54$, $p < .001$; "*How often have you been cyber-bullied in the past?": r*$(171) = .16$, $p < .05$; "*By how many individuals have you been cyber-bullied*?": $r(170) = .20$, $p < .01$).

Multi-dimensional Scale for Perceived Social Support (Peer Rejection). A positive relationship was found between peer rejection and one of the five measures of being the target of cyber-bullying ("*How often have you been cyber-bullied in the past*?": $r(170) = .17$, $p < .05$).

The results show that 47% of the tests for H1(c) were significant. Thus, H1(c) was partially supported. See Table C4 for details.

Hypothesis 2: Females will be cyber-bullied more often than males.

We hypothesized that females would be cyber-bullied more often than males. A t-test was conducted and results indicated no differences between males and females were found

across the *Cyber-bullying Target Scale* and four additional items that tapped into the extent to which individuals were cyber-bullied. Thus, H2 was not supported. See Table C5 for details.

Hypothesis 3(a): Individuals who report being targets of cyber-bullying and who possess a secure attachment style will experience less primary and secondary effects than individuals who report being targets of cyber-bullying and who possess an insecure attachment style.

As the model in Figure 1 shows, we hypothesized that individuals who report being targets of cyber-bullying and who possess a secure attachment style will experience less primary and secondary effects than individuals who report being targets of cyber-bullying and who possess an insecure attachment style.

Prior to conducting the tests for H3(a) secure and insecure attachment style categories were formed via a mean split procedure. A mean score was calculated for individuals in the secure category (M = 4.09) and a mean score was calculated for individuals in the insecure category (M = 4.67). Individuals who scored above the mean in the secure category and scored below the mean in the insecure category formed the secure attachment style category (n = 21). Those who scored below the mean in the secure category and scored above the mean in the insecure category formed the insecure attachment style category (n = 20).

A t-test was conducted on these two groups and results indicated significance across several of the effects variables, however results were opposite prediction. Prior to running the analysis, the significance level was adjusted for family-wise error rates.

Primary Effects. To adjust for inflated alpha error, the family-wise error rate for the primary effects variables was calculated at $p < .003$ (.05/17). Opposite to prediction, results indicate significance for two of the 15 primary effects variables (Dominance appraisal: $t(39) = -3.17$, $p < .003$; Threat appraisal: $t(39) = -3.12$, $p < .003$). The mean for the insecure group for the

Dominance appraisal was 4.15 and the mean for the secure group was 5.05. The mean for the insecure group for the Threat appraisal was 4.46 and the mean for the secure group was 5.72.

Secondary Effects. To adjust for inflated alpha error, the family-wise error rate for the secondary effects variables was calculated at $p < .005$ (.05/9). Opposite to prediction, results indicate significance for one of the nine secondary effects variables (HADS Anxiety: $t(38) = -3.48$, $p < .001$). The mean for the insecure group for the HADS Anxiety Scale was 1.32 and the mean for the secure group was 1.94.

A significant difference was found between a secure and insecure attachment style across a small subset of primary and secondary effects. However, the results contradict the hypothesis posed for this study, thus, H3(a) was not supported.

Hypothesis 3(b): Individuals who report being targets of cyber-bullying and who possess a secure attachment style will be more likely to tell someone about the cyber-bullying incident than individuals who report being targets of cyber-bullying and who possess an insecure attachment style.

We hypothesized that individuals who report being targets of cyber-bullying and who possess a secure attachment style will be more likely to tell someone about the cyber-bullying incident than individuals who report being targets of cyber-bullying and who possess an insecure attachment style. The same secure and insecure split was conducted as in H3(a) to form the secure and insecure groups. To test H3(b), a Chi-Square analysis was conducted based on this secure and insecure split (see Table C6a). One item measured whether or not participants told about the cyber-bullying incident that they recalled ("*Have you told anyone that you have been cyber-bullied?"*). Results of the Chi-Square analysis indicate no significant difference between

the attachment styles and telling someone about the cyber-bullying incident (χ^2 (3) = .02, *ns*). Thus, H3(b) was not supported. See Table C6b for details.

Hypothesis 4: Individuals who report being a target of cyber-bullying and report being a bully in the past will experience more secondary effects compared to individuals who report only being targets of cyber-bullying.

We hypothesized that individuals who report being targets of cyber-bullying and report being a bully in the past will experience more secondary effects compared to individuals who report only being targets of cyber-bullying. A t-test was conducted and results indicate partial support across the two categories (being both a target of cyber-bullying and being a cyber-bully versus being a target of cyber-bullying only) for a subset of secondary effects (HADS Anxiety: $t(176) = 1.20$, $p < .001$; HADS Depression: $t(177) = 2.24$, $p < .05$; CLQ Loneliness: $t(168) = 3.76$, $p < .001$; UCLA Loneliness: $t(169) = 3.65$, $p < .05$). The results show that 33% of the tests were significant. Thus, H5 was partially supported. See Table C7 for details.

Hypothesis 5(a): Individuals who are targets of cyber-bullying will report higher levels of unfamiliar mental representations regarding cyber-bullying experiences as compared to familiar mental representations.

We hypothesized that individuals who are a target of cyber-bullying will report higher levels of unfamiliar mental representations regarding cyber-bullying experiences as compared to familiar mental representations. A Chi-Square analysis was conducted and results were significant (χ^2 (1) = 79.3, $p < .05$). Thus, H6(a) was supported. See Table C8 for details.

Testing Hypothesis 5(b): Unfamiliar mental representations will account for variance in the set of cyber-bullying secondary effects variables.

As the model in Figure 1 shows, we hypothesized that unfamiliar mental representations will account for variance in the set of cyber-bullying secondary effects variables. A linear regression analysis was conducted to test this hypothesis. As Table C9 shows unfamiliar mental representations did not account for variance in the set of cyber-bullying secondary effects variables. To adjust for inflated alpha error, the family-wise error rate for the secondary effects variables was calculated at $p < .005$ (.05/9). Thus, H5(b) was not supported.

Testing Hypothesis 6: Message appraisals will account for variance in the set of cyber-bullying secondary effects variables.

As the model in Figure 1 shows, we hypothesized that message appraisals will account for variance in the set of cyber-bullying secondary effects variables. A linear regression was conducted to test this hypothesis. Consistent with prior literature, message appraisals consisted of 12 constructs (attention activity, valence, relevance, power, legitimacy, predictability, hostility, intentionality, hurtfulness, explicitness, dominance, and threat). Secondary effects variables were clustered into three domains including emotional, social, and academic effects, each of which were broken into specific subcategories (emotional effects: anxiety, depression; social effects: loneliness, peer rejection; academic effects: absences, grades). Statistical significance was found for six of the nine secondary effects variables. Attention to the Variance Inflation Factors (VIFs) showed that multicollinearity was not present in these analyses (all VIF values were well under 4, ranging from 1.38 to 2.74; Neter, Kutner, & Nachtsheim, 1996).

Anxiety. Anxiety was tested using two measures (HADS Scale and the DSM-IV checklist for anxiety). The results for both measures of anxiety were found to be significant (HADS

Anxiety: R^2 = .43, F(12,161) = 9.36, p < .001; DSM-IV Anxiety: R^2 = .22, F(12,155) = 3.32, p < .001). Three appraisals emerged as significant predictors for HADS anxiety (intention: β = -.17, p < .05; hurtful: β = .26, p < .01; predictability: β = .21, p < .01). Six appraisals emerged as significant predictors for DSM-IV anxiety (attention activity: β = .24, p < .05; power: β = .31, p < .01; hostility: β = .28, p < .01; intention: β = -.22, p < .05; hurtful: β = .25, p < .01; threat: β = -.33, p < .01). Thus, for anxiety, H6 was supported.

Depression. Depression was tested using two measures (HADS Scale and the DSM-IV checklist for depression). The results for both measures of depression were found to be significant (HADS Depression: R^2 = .35, F(12,163) = 6.80, p < .001; DSM-IV Depression: R^2 = .21, F(12,160) = 3.36, p < .001). Three appraisals emerged as significant predictors for HADS depression (relevance: β = .34, p < .001; intention: β = -.39, p < .001; hurtful: β = .21, p < .01). Four appraisals emerged as significant predictors for DSM-IV depression (power: β = .29, p < .01; hostility: β = .25, p < .01; intention: β = -.24, p < .01; threat: β = -.33, p < .01). Thus, for depression, H6 was supported.

Loneliness. Loneliness was tested using two measures (CLQ and the UCLA Loneliness Scale). The results for both measures of loneliness were found to be significant (CLQ: R^2 = .47, F(12,155) = 10.51, p < .001; UCLA Loneliness: R^2 = .50, F(12,153) = 11.68, p < .001). Four appraisals emerged as significant predictors for CLQ (relevance: β = .50, p < .001; legitimacy: β = .14, p < .05; intention: β = -.18, p < .05; dominance: β = .22, p < .01). Four appraisals emerged as significant predictors for UCLA Loneliness (attention activity: β = .17, p < .01; relevance: β = .47, p < .001; intention: β = -.02, p < .05; explicitness: β = -.24, p < .01). Thus, for loneliness, H6 was supported.

Results show that peer rejection, absences and lower grades were not significant. Overall results indicate 67% significance. Thus, H6 was partially supported. See Table C10. Appraisal correlation results are found in Table C16.

Hypothesis 7: Self-discrepancy will account for variance in the set of cyber-bullying secondary effects variables.

As the model in Figure 1 shows, we hypothesized that self-discrepancy will account for variance in the set of cyber-bullying secondary effects variables. Self-discrepancy was calculated by subtracting the "self" scale from the "other" scale to produce a difference score, which became the self-discrepancy score. A linear regression was conducted to test this hypothesis. To adjust for inflated alpha error, the family-wise error rate for the secondary effects variables was calculated at $p < .005$ (.05/9). Results indicated none of the nine secondary effects variables were significant. Thus H7 was not supported. See Table C11 for details.

Hypothesis 8: Females who report being targets of cyber-bullying will experience higher levels of self-discrepancy than male targets of cyber-bullying.

We hypothesized that females who report being targets of cyber-bullying will experience higher levels of self-discrepancy than male targets of cyber-bullying. A *t*-test was conducted to test this hypothesis. Results indicated no significant difference across males and females (Males: *M*(SD) = 1.53 (1.39); Females: *M*(SD) = 1.9 (1.62); *t*(150) = -1.43). Thus, H8 was not supported.

Hypothesis 9a: The set of variables that potentially moderate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying primary effects variables.

As the model in Figure 1 shows, we hypothesized that the set of variables that potentially moderate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying secondary effects variables. To adjust for inflated alpha error, the family-wise error rate for the secondary effects variables was calculated at $p < .003$ (.05/14). VIFs showed that multicollinearity was not present in these analyses (all VIF values were well under 4, ranging from 1.13 to 2.95). Results indicated significance for five of the 14 primary effects variables.

Attention Appraisal. The set of moderators accounted for a significant amount of variance in the attention appraisal ($R^2 = .20$, $F(4,160) = 9.50$, $p < .001$). One moderator emerged as a significant predictor (secure: $\beta = .33$, $p < .001$). Thus, for the attention appraisal, H9(a) was supported.

Relevance Appraisal. The set of moderators accounted for a significant amount of variance in the relevance appraisal ($R^2 = .26$, $F(4,165) = 14.25$, $p < .001$). One moderator emerged as a significant predictor (secure: $\beta = .39$, $p < .001$). Thus, for the relevance appraisal, H9(a) was supported.

Predictability. The set of moderators accounted for a significant amount of variance in the predictability appraisal ($R^2 = .10$, $F(4,165) = 4.30$, $p < .001$). One moderator emerged as a significant predictor (secure: $\beta = .39$, $p < .001$).

Dominance. The set of moderators accounted for a significant amount of variance in the dominance appraisal (R^2 = .10, F(4,163) = 4.25, p < .003). One moderator emerged as a significant predictor (secure: β = .37, p < .001).

Threat: R^2 = .16, F(4,165) = 7.62, p < .001) One moderator emerged as a significant predictor (secure: β = .49, p < .001).

The set of moderators did not account for significant amount of variance in mental representation and self-discrepancy

Results indicate 36% of the tests were significant in predicting variance in the primary effects variables. Thus, H9 was partially supported. See Tables C12(a) and C12(b) for details.

Testing Hypothesis 9b: The set of variables that potentially moderate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying secondary effects variables.

As the model in Figure 1 shows, we hypothesized that the set of variables that potentially moderate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying secondary effects variables. To adjust for inflated alpha error, the family-wise error rate for the secondary effects variables was calculated at p < .005 (.05/9). VIFs showed that multicollinearity was not present in these analyses (all VIF values were well under 4, ranging from 1.18 to 3.03). Results indicated significance for five of the nine secondary effects variables.

Anxiety. Anxiety was tested using two measures: HADS Scale and the DSM-IV checklist for anxiety. The results for only the HADS measures of anxiety was found to be significant (HADS Anxiety: R^2 = .33, F(4,162) = 19.35, p < .001). One moderator emerged as a significant predictor (secure: β = .60, p < .001). Thus, for the anxiety, H9(b) was supported.

Depression. Depression was tested using two measures: HADS Scale and the DSM-IV checklist for depression. The results for both measures of depression were found to be significant (HADS Depression: R^2 = .41, F(4,163) = 20.39, p < .001; DSM-IV Depression: R^2 = .13, F(4,160) = 5.96, p < .001). One moderator emerged as a significant predictor for HADS Depression (secure: β = .41, p < .001).

Loneliness. Loneliness was tested using two measures: CLQ and the UCLA Loneliness Scale. The results for both measures of loneliness were found to be significant (CLQ Loneliness: R^2 = .56, F(4,155) = 48.60, p < .001; UCLA Loneliness: R^2 = .45, F(4,153) = 29.92, p < .001) One moderator emerged as a significant predictor for CLQ (secure: β = .67, p < .001) and one moderator emerged as a significant predictor for UCLA (secure: β = .54, p < .001).

Results indicate 56% of the tests were significant in predicting variance in the secondary effects variables. Thus, H9(b) was partially supported. See Table C13 for details.

Hypothesis 10: The set of variables that potentially mediate the relationship between exposure to cyber-bullying messages and cyber-bullying effects will account for variance in the set of cyber-bullying secondary effects variables.

As the model in Figure 1 shows, we hypothesized that the set of variables that potentially mediate the relationship between exposure to cyber-bullying messages and cyber-bullying effects will account for variance in the set of cyber-bullying effects variables. Results indicated significance for six of the nine secondary effects variables.

Anxiety. Anxiety was tested using two measures: HADS Scale and the DSM-IV checklist for anxiety. The results for both measures of anxiety were found to be significant (HADS Anxiety: R^2 = .42, F(14,131) = 6.09, p < .001; DSM-IV Anxiety: R^2 = .30, F(14,127) = 3.38, p < .001). Four appraisals emerged as significant predictors for HADS anxiety (relevance:

β = .19, p < .05; hurtful: β = .23, p < .05; dominance: β = .18, p < .05; predictability: β = .19, p < .05). Four appraisals emerged as significant predictors for DSM-IV anxiety (valence: β = .30, p < .01; power: β = .37, p < .001; hostility: β = .37, p < .01; hurtful: β = .29, p < .01; threat: β = -.40, p < .01).

Depression. Depression was tested using two measures: HADS Scale and the DSM-IV checklist for depression. The results for both measures of depression were found to be significant (HADS Depression: R^2 = .34, F(14,133) = 4.32, p < .001; DSM-IV Depression: R^2 = .27, F(14,128) = 2.97, p < .001). Two appraisals emerged as significant predictors for HADS depression (relevance: β = .33, p < .001; intentionality: β = -.31, p < .01). Five appraisals emerged as significant predictors for DSM-IV depression (valence: β = -.27, p < .05; power: β = .32, p < .01; hostility: β = .37, p < .01; intentionality: β = -.25, p < .05; threat: β = -.39, p < .01).

Loneliness. Loneliness was tested using two measures: CLQ and the UCLA Loneliness Scale. The results for both measures of loneliness were found to be significant (CLQ: R^2 = .45, F(14,125) = 6.47, p < .001; UCLA Loneliness: R^2 = .48, F(14,124) = 7.20, p < .001). Two appraisals emerged as significant predictors for CLQ (relevance: β = .42, p < .001; dominance: β = .21, p < .05). Three appraisals emerged as significant predictors for UCLA Loneliness (relevance: β = .38, p < .001; intention: β = -.02, p < .05; dominance: β = .11, p < .01).

Attention to the Variance Inflation Factors (VIFs) showed that multicollinearity was not present in this analysis (all VIF values were well under 4, ranging from 1.12 to 3.22; Neter, Kutner, & Nachtsheim, 1996). Results indicate 67% of the secondary effects variables were significant, thus, H10 was partially supported. See Table C14 for details.

CHAPTER V

Discussion

This study had three main goals. The first was to examine cyber-bullying as a social transgression and the potentially negative effects it may have on individuals, specifically adolescents and young adults. The second was to create and establish support for a model that explained the psychological process prompted by a cyber-bullying message. The third goal of this research was to argue for the heuristic, theoretical, and practical value of the model in terms of being able to reflect the psychological process that individuals move through when exposed to a cyber-bullying message, and its ability to account for the outcomes of bullying (emotional, academic, and social). To accomplish these goals, a packet of standardized measurement tools were used. The survey packet was made up of a combination of well-established tools that possess strong psychometric properties that have been modified slightly for this study and a modified general questionnaire that contains items specifically designed for this project. Surveys designed to measure the moderating and mediating variables as well as the outcomes were included in the packet. In addition, a new cyber-bullying target scale was designed and tested to measure levels of importance, involvement, and power in the bully/target relationship. It is from the results of these measurement tools that conclusions are drawn.

Summary of the Project

This project, which examines the timely topic of cyber-bullying has contributed to the field of Communication in several ways. First, this project has contributed to the existing body of knowledge in the area of cyber-bullying by assessing the extent to which current scales designed to measure various effects of cyber-bullying as well as the cyber-bullying experience were able to capture the process of cyber-bullying. In addition a new measurement tool has been

created for the psychological process involved with the receiving of a cyber-bullying message, which demonstrated strong psychometric properties, supporting its usefulness. These tools will assist future researchers in examining both cyber-bullying specifically and negative messages in general. Second, a model has been developed to further our understanding of the psychological process prompted by a cyber-bullying message. This model, which has been found to demonstrate clearly that both moderators as well as mediators do indeed affect outcomes, will aid future studies in the area of cyber-bullying as well as research examining areas of verbal and social aggression, involving appraisals, social information processing, and self-discrepancy. Third, significant relationships were found between the receipt of a cyber-bullying message and many of the mediating, moderating, and secondary effects variables tested for in this study. This study has found that exposure to a cyber-bullying message demands the attention of the target and results in varying degrees of secondary effects (such as emotional, social, and academic outcomes), which are also affected by specific moderating and/or mediating variables. These results provide additional insight into the process of mediation and moderation and message effects. Finally, although the methodology used for this study did not allow measurement of immediate effects after receiving a cyber-bullying message, significant relationships were still found with regard to exposure to a cyber-bullying message and negative secondary effects within emotional, social, and academic domains.

It is clear from the results that the effects of message exposure, such that occurs in the cyber-bullying process, remain salient in the minds of the target and are able to be recalled with clarity. Although some of the results from this study indicate a need for further testing and continued exploration, what has been uncovered in this study provides clarity and insight into processing of cyber-bullying messages and their effects. In general, this study shows that

negative effects do result from exposure to a cyber-bullying message and are mediated as well as moderated by other factors. Whether a cyber-bullying message is delivered for the purpose of entertainment, social acceptance, or a reaction to being bullied, the findings in this study support Kinney and Porhola (2009) who state "bullying is a form of communication that holds the power to hurt" (p. ix). This study reveals that targets of cyber-bullying messages display some form of hurt that manifests along emotional, social, and academic lines as a secondary effect.

Limitations

The present study found most of its limitations in the area of methodology. Participants were asked to recall their cyber-bullying experience from the past. In some instances, participants were recalling memories that occurred over a year ago. This may affect participants ability to report how they felt or responded immediately after receiving the cyber-bullying message. This recollection technique may also have affected the mediating factors measured in this study. Self-discrepancy, appraisals, and mental representations occur quickly after a message is received. Recalling the cyber-bullying incident from the past may reduce the intensity of the appraisals and self-discrepancy felt by the individual. In addition, mental representations at the time the cyber-bullying message was received may have been more vague, however in light of the continued growth of awareness surrounding the area of cyber-bullying in the media and in society, retrospective mental representation may be skewed. In other words, an individual who recalls a cyber-bullying incident that occurred three years ago may, at that time, not have understood what it was or what to do as clearly as they do today. This may have affected the participants' ability to recall accurately truly whether or not they had limited mental representations at the time of the transgression.

Another limitation to this study is the new self-report measure that was developed for this study. Though a reliability analysis suggests good internal consistency for the *Cyber-bullying Target Scale* (α = .84), the fact that the measure has no prior use and was created specifically for this study is a limitation for consideration. Additional use of this tool will strengthen its psychometric properties and support its usefulness.

The *General Cyber-bullying Questionnaire* that was modified for this study may also be a limitation worth noting. At the time this study was conducted, there were no standardized tools for measuring cyber-bullying. In fact, even the term "cyber-bullying" has not been standardized. The term "cyber-bullying" may be supplanted with terms such as "internet harassment", "cyber victimization", or "online harassment". While many studies use Olweus Bully/Victim Questionnaire (1994) as the foundation for both the definition and the measurement tool, creating a more standardized way to measure and define cyber-bullying is clearly needed. Future research would benefit from a continued effort to test and re-test current and relevant cyber-bullying tools.

The model created and tested for the present study focused on specific moderators, mediators, and secondary effects. The results suggest that the model created for this study is a valid and practical tool for measuring and understanding the process that occurs between the receipt of a cyber-bullying message and the effects. However, there are a number of other variables that could be tested within the framework of the present model. Uncertainty and anonymity were discussed briefly in the review of literature for this study and have been found to play an important part in the psychological process that occurs after receipt of a cyber-bullying message. As stated by Pure (2009), anonymity is a prominently documented element that is highly unique to cyber-bullying. One study does not have the capability to explore every facet of

the cyber-bullying process at every stage, and this study is no exception. Future researchers will find the model designed and tested for this study useful in that they will be able to plug in a variety of variables as both moderators and/or mediators in order to test a variety of secondary effects.

In addition, the limited scope of the cyber-bullying model design is intentional in order to examine the depth of the cyber-bullying process from exposure to effects. However, this model is not intended to cover the entire process of cyber-bullying. Future research may expand on the present model by adding such constructs as coping strategies once the effects are triggered by a cyber-bullying message, or measure the process from the perspective of the bully.

Finally, the present study could have taken into consideration the aspect of culture in more detail. Due to the fact that participants reported a variety of ethnicities, future research would benefit from an examination of culture as a potential mediator, moderator, or influential factor resulting from the receipt of a cyber-bullying message. An in-depth examination of the various attitudes, values, and beliefs among diverse cultural backgrounds toward cyber-bullying would aid in the understanding of how these results compare with the emotional, social, and academic effects exhibited by those from other ethnicities.

Despite these limitations, the findings of this study hold importance and are valid contributions to the body of literature examining the psychological process of cyber-bullying.

Review of Research Findings

In order to apply the results of this study to the importance of cyber-bullying in society today, overall findings and/or conclusions are discussed next. To set the stage for discussing the cyber-bullying model designed for this study, significant findings for each guiding research

question are discussed. In addition, primary, secondary, moderator, and mediator effects are addressed with future implications and opportunities for further research noted.

How does cyber-bullying manifest? The intent of the first research question was to examine how an individual determines that a message received is considered negative as well as if that message is defined as cyber-bullying. In addition, once a message is determined to be cyber-bullying, this study sought to uncover what degree of clarity the target has that this is a negative message.

Prior to participating in this study, participants were asked a series of questions that helped them determine if they had actually received a cyber-bullying message (see Appendix C). Those individuals who had experienced a bullying message were further screened into one of two categories: face-to-face bullying or cyber-bullying.

This process revealed that cyber-bullying manifests in the individual as a message perceived to be: mean/hostile, hurtful, abusive, coercive, making fun, casting one negatively (such as calling one names), or as lies or rumors. This study reveals that cyber-bullying is clearly demonstrated to the individual when these negative actions occur via some form of media, such as cell phone, email, text or instant message, chat rooms, or social networking. The results of this study show that while cyber-bullying is still a new area for researchers, it is not so new that an ample amount of victims of cyber-bullying are not available. In addition, when we described both face-to-face bullying and cyber-bullying to participants, they understood the difference between the two. This is important because as prior research states, while cyber-bullying has been shown to cause distress, its impact relative to face-to-face bullying is not clear (Smith et al., 2008). As prior research and anecdotal evidence has already shown, cyber-bullying exists, is understood by many to be called cyber-bullying, and is capturing society's attention.

This study has provided additional support for this as well as offered further insight into how cyber-bullying manifests.

In order to determine the extent to which cyber-bullying is demonstrated to the target, participants for this study were asked to complete a variety of measures, including an appraisals scale (see Appendix B). Results from the appraisals scale indicate that the message received caused the targets to pay attention to that message and that the message was: not enjoyable or pleasant, highly relevant or significant to them, made them feel powerless, not reasonable, unfair, or unjust, hostile, intentional, hurtful, explicit, clear, dominating, predictable, and threatening. The results from the appraisals scale indicate that cyber-bullying manifests in an individual in a substantial way. Based on these findings, participants feel strongly that the cyber-bullying message they received was a negative experience. This is important to understand because further evidence to support the negative nature of this form of social transgression is needed to compel lawmakers, teachers, parents, and society to enact change to protect individuals from this form of social abuse.

This study has clearly shown that once an individual perceives a message to be cyber-bullying, the message is considered "negative". Next, the discussion turns to the ways in which this study has shown that once considered negative, cyber-bullying messages affect the individual in profound ways.

What are the effects of cyber-bullying? The intent of the second research question that guided this study was to examine in general how cyber-bullying affects adolescents and young adults. Specifically, are these effects considered negative or positive to the target? As discussed previously, results from the appraisals scale indicate that cyber-bullying creates negative thoughts in the target. While these negative thoughts are not the sole focus of this study, future

researchers may want to focus on these effects specifically to examine their nature and severity in more detail.

This study shows that the negative effects of cyber-bullying include anxiety, depression, loneliness, peer rejection, an increase of absences, and a drop in grades. These findings support the literature that this study was drawn from. In order to discuss the results from this study, the model designed and tested for this study will be used as a template to guide the remaining discussion.

Testing the Model. As Table C15 shows, there is strong and compelling evidence that the process of cyber-bullying can be conceptualized in terms of a moderator/mediator model. As a complete set, the moderators and mediators accounted for a significant amount of variance in five of the nine secondary effects variables (HADS Anxiety: Total R^2 = .53, F(18,121) = 6.36, p < .01; DSM-IV Anxiety: Total R^2 = .33, F(18,118) = 2.71, p < .001; HADS Depression: Total R^2 = .48, F(18,123) = 5.27, p < .05; DSM-IV Depression: Total R^2 = .37, F(18,121) = 3.34, p < .001; UCLA Loneliness: Total R^2 = .58, F(18,114) = 7.30, p < .01). These overall results can be broken down further into the unique contributions that the set of moderators and the set of mediators make in terms of accounting for variance in the set of secondary effects.

The set of moderators accounted for a significant amount of variance in six of the nine secondary effects variables measured in this study.

Anxiety. Anxiety was tested using two measures: *Hospital Anxiety and Depression Scale* (HADS) Scale and the *Diagnostic Statistical Manual, 4th edition* (DSM-IV) checklist for anxiety. The results for only the HADS scale were found to be significant (HADS Anxiety: R^2 = .28, F(4,121) = 11.44, p < .001). One moderator emerged as a significant predictor (secure: β = .41, p < .001).

Depression. Depression was tested using two measures: HADS scale and the DSM-IV checklist for depression. The results for both measures of depression were found to be significant (HADS Depression: R^2 = .35, F(4,123) = 15.73, p < .001; DSM-IV Depression: R^2 = .13, F(4,119) = 4.32, p < .01). One moderator emerged as a significant predictor for HADS Depression (insecure: β = .37, p < .001) and one moderator emerged as a significant predictor for DSM-IV Depression (biological sex: β = -.23, p < .01).

Loneliness. Loneliness was tested using two measures: *Children's Loneliness Questionnaire* (CLQ) and the UCLA Loneliness Scale. The results for both measures of loneliness were found to be significant (CLQ: R^2 = .58, F(4,116) = 38.71, p < .001; UCLA Loneliness: R^2 = .43, F(4,114) = 20.92, p < .01). One moderator emerged as a significant predictor for CLQ (secure: β = .49, p < .001) and one moderator emerged as a significant predictor for UCLA Loneliness (secure: β = .33, p < .01).

Peer Rejection. Peer rejection was tested using the *Multidimensional Scale of Perceived Social Support* (MSPSS). The results were found to be significant (Peer Rejection: R^2 = .10, F(4,112) = 2.94, p < .05). One moderator emerged as a significant predictor for peer rejection (insecure: β = .37, p < .001) and one moderator emerged as a significant predictor for DSM-IV Depression (being a bully: β = -.20, p < .05). Thus, results show support for model conceptualization.

In addition, the set of mediators accounted for a significant amount of variance in six of the nine secondary effects variables measured in this study.

Anxiety. The results for both measures of anxiety were found to be significant (HADS Anxiety: R^2 = .42, F(14,131) = 6.09, p < .001; DSM-IV Anxiety: R^2 = .30, F(14,127) = 3.38, p < .001). Four mediators emerged as significant predictors for HADS Anxiety (valence: β = -.21,

$p < .05$; power: $\beta = .18$, $p < .05$; explicitness: $\beta = .20$, $p < .01$; predictability: $\beta = .17$, $p < .05$) and four mediators emerged as significant predictors for DSM-IV Anxiety (valence: $\beta = -.32$, $p < .01$; power: $\beta = .35$, $p < .01$; hostility: $\beta = .32$, $p < .05$; hurtfulness: $\beta = .29$, $p < .05$; threat: $\beta = -.40$, $p < .01$).

Depression. The results for both measures of depression were found to be significant (HADS Depression: $R^2 = .34$, $F(14,133) = 4.32$, $p < .001$; DSM-IV Depression: $R^2 = .27$, $F(14,128) = 2.97$, $p < .001$). One mediator emerged as a significant predictor for HADS depression (intentionality: $\beta = -.18$, $p < .01$) and four mediators emerged as significant predictors for DSM-IV Depression (valence: $\beta = -.36$, $p < .01$; power: $\beta = .42$, $p < .001$; hostility: $\beta = .30$, $p < .01$; threat: $\beta = -.41$, $p < .01$).

Loneliness. The results for both measures of loneliness were found to be significant (CLQ: $R^2 = .45$, $F(14,125) = 6.47$, $p < .001$; UCLA Loneliness: $R^2 = .48$, $F(14,124) = 7.20$, $p < .001$). One mediator emerged as a significant predictor for UCLA Loneliness (explicitness: $\beta = .37$, $p < .01$).

As a result, there is clear evidence that the process of cyber-bullying can be conceptualized as a moderator/mediator model as shown in Figure 1. The results from the present study suggest that upon receipt of a cyber-bullying message, individuals pay attention to the message and interpret it in meaningful and powerful ways. Next, specific findings that relate to the components of the model are discussed. Specifically, moderators will be discussed followed by a discussion regarding the primary effects. Following this, the discussion turns to findings with regard to mediators followed by a discussion of secondary effects.

Moderators. The moderators in this study were found to influence the strength of the relationship between being a target of cyber-bullying and secondary effects. The next section

will cover H5(a), H3(a), H4, H9(a), and H9(b), which focused on the moderators in Figure 1 of the moderator/mediator model. The present study found that unfamiliar mental representations specifically moderated the relationship examined and results for H5(a) are found below.

Individuals who are targets of cyber-bullying will report higher levels of unfamiliar mental representations regarding cyber-bullying experiences as compared to familiar mental representations. Current research has pointed out that cyber-bullying literature has not sufficiently addressed the issue of what to do when faced with a cyber-bullying incident (Campfield, 2006; Willard, 2007). The results from the present study show support for this. Results show that cyber-bullying targets have limited similar previous mental representations from which to draw an effective coping strategy when faced with a cyber-bullying message. Results from the *General Cyber-bullying Questionnaire* indicate respondents stated they do not know what to do when they are cyber-bullied. This may be because the cyber-bullying process is a new phenomenon where the negative effects of said phenomenon have been highly publicized recently in the media, however, the media has not sufficiently portrayed what an individual should do to prevent tragic results such as suicide. These results suggest the need for lawmakers, schools, and parents to develop social programs for dealing with a cyber-bullying message in a variety of contexts.

As will be discussed next, findings for H3(a) show that opposite to the original prediction, a secure attachment style seems to be important in whether one experiences negative effects from the cyber-bullying message. In other words, the model shows that attachment style does moderate the strength of the relationship between exposure to the cyber-bullying message and secondary effects. This may be a result of secure individuals not having the level of

exposure to negative messages as insecure individuals have. This may lead to insufficient coping skills when dealing with verbal aggression.

The present study found for H3(a) that attachment style is an important moderator that affects both primary and secondary effects, the results of which are discussed next.

Individuals who report being targets of cyber-bullying and who possess a secure attachment style will experience less primary and secondary effects than individuals who report being targets of cyber-bullying and who possess an insecure attachment style. We hypothesized that individuals who report being targets of cyber-bullying and who possess a secure attachment style will experience less primary and secondary effects than individuals who report being targets of cyber-bullying and who possess an insecure attachment style. Literature suggests that individuals, who develop an insecure attachment style in childhood, may also develop a victim schema whereby they respond to a cyber-bullying message in a weak and helpless manner (Perry, Hodges, & Egan, 2001; Rodkin & Hodges, 2003). A t-test was conducted and results indicated significance across many variables, however the results support a contrary view of the hypothesis posed. The reported mean was higher for secure individuals in 20 out of 24 primary and secondary effects variables. This indicates that secure individuals are actually affected by the cyber-bullying messages more than insecure individuals. This may be because secure individuals have not developed the coping skills necessary to stabilize negative feelings. In essence, secure individuals may be more sensitive to negative messages. Insecure individuals may have had previous exposure to negative messages, which may result in desensitization which reduces the cognitive dissonance that creates insecurity.

The present study found for H4 that having bullied someone in the past is an important moderator that affects an individual emotionally, the results of which are discussed next.

Individuals who report being targets of cyber-bullying and report being a bully in the past will experience more secondary effects compared to individuals who report only being targets of cyber-bullying. Individuals who are both a target and a bully have been shown in the current research literature to feel more distress (Gradinger, Strohmeier, & Spiel, 2009). Results from the present study add partial support to this conclusion. The HADS scale indicated significant results for both anxiety and depression, however the DSM-IV "yes/no" checklist was not sensitive enough to display significant effects in most incidents. As mentioned previously, this may be due to the overly simplistic design of the DSM-IV checklist. The results from the UCLA Loneliness Scale were shown to be significant, while the results from the CLQ were not significant. Being both a bully and a target did not seem to affect a target academically, results indicating no significant relationship with an increase in absences or a decrease in grades.

The present study found for H9(a) that as a set, moderators affect primary effects, such as appraisals, mental representations, and self-discrepancy as a set, the results of which are discussed next.

The set of variables that potentially moderate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying primary effects variables. This hypothesis tested the concept of moderated mediation. The set of moderators were examined to see whether they affected the set of primary effects, which are also known as the mediating variables. Although the moderators as a set did not influence the strength of each individual primary effect in the set (mental representations and self-discrepancy were not significant), results show significant support that the moderators as a set do influence the strength of some of the appraisals found in the set of primary effects variables. This is important to understand in that as a set, biological sex, attachment style, and being a bully has

been shown to influence the strength to which an individual who has received a cyber-bullying message pays attention to that message and perceives that message to be relevant, predictable, dominant, or threatening.

Future research may seek to examine the strength to which each individual moderator within this set influences each individual mediator within that set. It is important to continue this line of research in the area of moderation and mediation with regard to cyber-bullying because a greater understanding of what influences some people to feel greater effects of cyber-bullying messages than others can help those who develop and design material used to help those who receive a cyber-bullying message.

The present study found for H9(b) that as a set, moderators affect secondary effects, such as anxiety, depression, loneliness, peer rejection, absences, and grades as a set, the results of which are discussed next.

The set of variables that potentially moderate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying secondary effects variables. As H9(a) tested the moderators as a set to see if they influenced the strength of the primary effects variables, H9(b) tested these same moderators as a set to see if they influenced the strength of the secondary effects variables. As the results show, biological sex, attachment style and being a bully, as a set, do influence the strength of secondary effects as a complete set, however seems to focus primarily on anxiety, depression and loneliness felt by an individual who receives a cyber-bullying message. This set of moderators do not significantly influence feelings of peer rejection, attendance or grades. As discussed previously, this may be due to the internal nature of anxiety, depression, and feelings of loneliness and the more external or behavioral nature of peer rejection, attendance, and grades. It would be important for future

research to explore this area further and find out what level of internal distress causes an individual to react outwardly. One area of research in particular that may be useful to further this line of thinking would be the concept of learned helplessness (Seligman, 1975). It may be that as the level of internal distress increases, possibly due to repeated exposure to aggressive messages, the potential for external reactions increases as well.

Next will be a discussion on the primary effects of cyber-bullying.

Primary effects of cyber-bullying. One of the guiding questions for this study was to examine the effects experienced by the target of a cyber-bullying message after that individual attends to the message, but prior to experiencing secondary effects. This study focused on appraisals, mental representations, and self-discrepancy. As discussed previously, all 12 constructs that make up appraisals have been shown to be present after receiving a cyber-bullying message.

Targets of a cyber-bullying message also create mental representations of what should occur after receiving the messages. This study has shown that targets of a cyber-bullying message have limited mental representations from which to base decisions on. Participants for this study indicated that they have limited experiences with cyber-bullying; do not have contact with many people who have had experiences with cyber-bullying; and do not know what to do when faced with a cyber-bullying situation.

The present study also found that discrepancy exists between what a target of a cyber-bullying message thinks about regarding self and what s/he thinks the bully thinks about him/her. As shown in Figure 1, and as concluded from the results of this study, primary effects are also considered to be mediators between exposure to a cyber-bullying message and secondary effects.

Next, some of the same variables discussed as primary effects are now discussed as mediators. Relevant findings and future implications are also discussed.

Mediators. While testing the overall model, several of the mediating variables have a direct influence on secondary effects. From a mediation standpoint, the results of this study show that when an individual finds the cyber-bullying message to be significantly unpleasant (valance), the individual feels anxiety as well as depression. Likewise, results support the concept of mediation in that the more powerful, explicit, and threatening an individual believes a message to be, the more likely that individual will experience anxiety and depression.

It is interesting to note that while many of the appraisals significantly mediate the relationship between the cyber-bullying message exposure and emotional effects (anxiety and depression), social effects and academic effects did not seem to be elicited. One explanation for this may be that when an individual receives a negative message, such that occurs when one is being cyber-bullied, and mentally appraises that message to be negative, the effects felt are more internal versus external. In other words, a cyber-bullying message creates internal distress however, for the general population, does not create such distress as to affect an individual socially or academically.

This finding may fly in the face of the effects of cyber-bullying covered by the media. From a media standpoint, it would appear that severe cases of cyber-bullying cause tremendous external effects such as peer ostracizing, having to move to a different school, or even suicide. This may be in extreme cases, but not for the generalized public. It would be informative to measure the extremeness of a cyber-bullying message and measure the levels of appraisals made about that experience against the results of this study. This could indicate a threshold that

policymakers, teachers, parents, and individuals could use to help determine the help or intervention necessary to avoid extreme results such as we have seen in the media.

The present study found for H5(b) that one of the three moderators, specifically mental representations, affect secondary effects, such as anxiety, depression, loneliness, peer rejection, absences, and grades as a set, the results of which are discussed next.

Unfamiliar mental representations will account for variance in the set of cyber-bullying secondary effects variables. Mental representations are the first of the set of mediators to be discussed in this section. Significant variance was accounted for by unfamiliar mental representations for peer rejection, however the remaining secondary effects variables (anxiety, depression, loneliness, attendance, and grades) were not found to be significant. Results from the present study indicate that not having a clear mental picture of what to do when an individual is cyber-bullied only affects a target's perception of being rejected by peers and does not affect emotional or academic outcomes. Lazarus and Folkman (1986) explain that stress may increase when individuals feel they do not have sufficient skill or resources to handle a situation. While this does not seem to be the case, results from this study do support Slonje and Smith (2008) and Nansel et al. (2003) that state peer rejection is a serious problem that may result from being bullied.

The present study found for H6 that one of the three moderators, specifically appraisals, affect secondary effects, such as anxiety, depression, loneliness, peer rejection, absences, and grades as a set, the results of which are discussed next.

Message appraisals will account for variance in the set of cyber-bullying secondary effects variables. According to research, appraisals mediate the effect stress has on an individual (Denson et al., 2009). Recall that appraisals can be described as a judgment call regarding the

implications of a situation juxtaposed alongside an individual's personal well-being and that individual's ability to cope with that situation (Dillard et al., 1996). For this study, appraisals were broken into 12 constructs: attention, valence, relevance, power, legitimacy, predictability, hostility, intentionality, hurtfulness, explicitness, dominance, and threat. Paying attention to the cyber-bullying message was associated with significant amounts of variance in scores for anxiety, depression, and loneliness. This seems to indicate that the cyber-bullying messages, which create the most negative secondary effects, demand the attention of the individual.

The present study found for H7 that one of the three moderators, self-discrepancy, affect secondary effects, such as anxiety, depression, loneliness, peer rejection, absences, and grades as a set, the results of which are discussed next.

Self-discrepancy will account for variance in the set of cyber-bullying secondary effects variables. Self-discrepancy is the final mediator discussed at an individual level. Results from a linear regression analysis indicate only one of the nine secondary effects variables was accounted for by self-discrepancy, peer rejection. These results may indicate that while discrepancy between what an individual actually believes to be true about the self and what that individual believes the bully believes to be true about them may exist, it does not create an increase in anxiety, depression, or loneliness. However, this discrepancy between the self and other seems to create an increase in feelings of peer rejection. A feeling of being rejected by one's peers seems to make sense, given that the discrepancy measured is between what one feels about the self and what one feels the other feels about this same self. In other words, there is a discrepancy between what I feel I am and what I feel the bully thinks I am, especially if the bully happens to be a peer. The results from the *General Cyber-bullying Questionnaire* indicate that 73.6% of cyber-bullying occurs at school or home (assuming that the nature of cyber-bullying would

transcend the school walls into the home) and that 59.1% of those who report being cyber-bullied indicated the bully was either a current/former friend or acquaintance. These figures also lend support for H7 in that a large percentage of cyber-bullies are peers.

Now that we have discussed the mediators individually and their relation to the secondary effects, an examination into the results of how the mediators as a set influence the set of secondary effects variables will be discussed. The present study found for H10 that one of the three moderators, self-discrepancy, affect secondary effects, such as anxiety, depression, loneliness, peer rejection, absences, and grades as a set, the results of which are discussed next.

The set of variables that potentially mediate the relationship between exposure to cyber-bullying messages and cyber-bullying effects will account for variance in the set of cyber-bullying effects variables. Mediation occurs when the relationship between the independent variable and the dependent variable would not exist if it were not for the mediating variable. Results show that as a set, appraisals, mental representations, and self-discrepancy do mediate the relationship between exposure to the cyber-bullying message and the set of emotional, social, and academic effects. However, anxiety, depression, and loneliness seem to be significant secondary effects that occur within this set. As mentioned previously, there seems to be a recurring theme when looking at moderators or mediators as sets. The set of mediators seem to affect an individual internally more significantly than externally. It would be important for future researchers to explore the reasons why this may be. Coping styles may be one area for future exploration. Although the present research study indicates that more people tell others about the cyber-bullying incident than do not, the results from this particular hypothesis may indicate a need for further exploration. If individuals keep the cyber-bullying incident internalized, the effects may likewise be internal in nature.

Next will be a discussion on the primary effects of cyber-bullying.

Secondary effects of cyber-bullying. The present study sought to uncover the secondary effects that are prompted by a cyber-bullying message. Results from a variety of scales indicate targets experience anxiety, depression, loneliness, and in some instances, peer rejection. The results from the appraisal scale also reveal that other secondary effects may be present as well, such as: powerlessness, hurt, and feelings of being threatened.

The present study found for H1(a) that receiving a cyber-bullying message leads to such secondary effects as anxiety and depression, which is discussed next.

Being the target of cyber-bullying will be correlated positively with anxiety and depression. Once a cyber-bullying message is received, the target attends to the message, and mediating and moderating factors are accounted for, secondary effects such as anxiety and depression have been shown to occur. A positive relationship was found between anxiety and four of the five scales that measured being a target of a cyber-bullying message. Results indicated that the HADS Anxiety scale was more effective in finding a significant relationship between anxiety and being a target of cyber-bullying than the DSM-IV checklist. This may be due to the detailed nature of the HADS scale as opposed to the DSM-IV checklist, which is in a dichotomous, "yes/no" format. The cyber-bullying target scale, which was designed for this study showed a significant relationship with anxiety, which supports the strength of this scale as a legitimate measurement tool to assess being the target of cyber-bullying. The results from this hypothesis support previous studies that have shown targets of bullying may experience anxiety (Dill et al., 2004; Erath et al., 2007; Lopez & DuBois, 2005). This makes sense, since, according to the National Institute of Health (NIH), anxiety can be an expected reaction to stress and receiving a cyber-bullying message can be stressful. These findings support Ybarra et al. (2004)

who found targets of cyber-bullying are at an increased risk for emotional distress. Future research may explore the use of alternative scales as well as more specifically addressing the degree to which the various types of cyber-bullying methods affect the target emotionally.

Although it was not as significant as anxiety, a positive relationship was also found between being the target of a cyber-bullying message and depression. This discrepancy may be due to the immediate effect of anxiety as opposed to the delayed effect of depression. Hart (1999) states that anyone who struggles with anxiety must also learn to deal with depression, which may "go along for the ride" (p. 168). In addition, Hart states that "recognition of anxiety and its causes remains a critical first step for the successful treatment of many complicated depressive episodes" (p. 177). Contrary to the results from the anxiety measurement tools, the tools used to measure depression showed opposite results. The HADS scale, used to measure depression in targets after receiving a cyber-bullying message was significant only in relation to the cyber-bullying target scale designed for this study, which once again supports the strength of this scale as a legitimate measurement tool to assess being the target of cyber-bullying. Whereas, the DSM-IV checklist for depressive tendencies was significant in the area of "how often have you been cyber-bullied in the past?" and "How many times were the cyber-bullying messages forwarded to others or viewed". These results may indicate that frequency, both in being bullied and how many times others view the cyber-bullying message, has a more long-lasting effect in the target. One potential reason that the lack of significant results for the DSM-IV checklist for anxiety is the simple "yes/no" design of the scale, the results for depression contradict this speculation. This, once again, may be due to the delayed and more long-lasting effect of depression versus anxiety. Because of the multi-faceted nature of depression, future research in the area of depression and cyber-bullying messages may need to utilize another type

of measurement tool, such as the Beck Depression Inventory, and focus specifically on cyber-bullying and depression.

The present study found for H1(b) that receiving a cyber-bullying message leads to such secondary effects as absences and lower grades, which is discussed next.

Being the target of cyber-bullying will be correlated positively with absences and negatively with grades. Findings from this study support Berger (2007) who states that absences increase with victimization. The results also support Dube and Orpinas (2009), which found students who were referred for attendance problems were absent partly due to anxiety-producing situations. The results from this study indicated a positive relationship between absences and two out of the five target of cyber-bullying measures. The two cyber-bullying measurement tools that were found to be significant were the only two measures that focused on frequency of the cyber-bullying message ("*how often have you been cyber-bullied in the past*" and "*please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others*"). This may indicate that being a target of a single cyber-bullying message may not have a negative effect on attendance, however, as message frequency increases, both delivered to the target as well as the target's social surroundings, anxiety increases (as partially supported in H1(a)), thereby increasing absenteeism.

Partial support was found between lower grades and three of the being a target of cyber-bullying measures. The three measures that had a significant relationship were the measures that assessed frequency ("*how often have you been cyber-bullied in the past*" and "*please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others*"). This supports the literature that has concluded one single act of cyber-bullying can have repetitive qualities (Dooley et al., 2009) and that breadth of audience may be one facet of

cyber-bullying that distinguishes it from face-to-face bullying. The findings support the possibility that it is not merely the act of being cyber-bullied, but the frequency of the act that causes distress. Whereas current literature, including the present study, seems to limit the investigation of frequency to one or two questions, future research may include an entire scale specifically addressing this issue of cyber-bullying message frequency.

The *Cyber-bullying Target Scale*, which was developed specifically for this study, indicated a significant relationship between being a target of cyber-bullying and lower grades. These findings add additional support to the strength of this scale as a legitimate measurement tool to assess being the target of cyber-bullying. However, there was no significant relationship between the cyber-bullying target scale and absences. Once again, this may be due to the frequency to which a target is cyber-bullied. In other words, being cyber-bullied frequently may lead a target to be distracted from schoolwork, but does not create enough distraction or stress to sustain it long-term, which would affect a target's attendance record.

The present study found for H1(c) that receiving a cyber-bullying message leads to such secondary effects as loneliness and peer rejection, which is discussed next.

Being the target of cyber-bullying will be correlated positively with loneliness and peer rejection. A positive relationship was found between loneliness and two of the five being a target of cyber-bullying measures. The, *"How often have you been cyber-bullied in the past?"* and *"by how many individuals have you been cyber-bullied"?* target variables were found to be significantly correlated with loneliness. This indicates that when individuals are bullied frequently and by more people, they are prone to feel lonely. The other variables that measured being a target of cyber-bullying focused on such things as how many times the message was viewed by others and how many messages were received by the target before the target realized

they were being cyber-bullied and were not found to be significant indicators of loneliness or peer rejection. Future research may focus on measuring frequency of messages compared to level of social effects. Slonje and Smith (2008) support this with their research findings that show that some students indicated cyber-bullying was worse than face-to-face bullying because of the lack of friendship support.

Peer rejection did not seem to show as strong a relationship with being a target of cyber-bullying as loneliness. Peer rejection was significantly correlated with only one of the five measures for being the target of cyber-bullying ("*How often have you been cyber-bullied in the past?*"). Although the literature has concluded that peer rejection is one potential effect of cyber-bullying, the results of this study show that further research into this area is needed to make this claim.

Future research may use another measurement tool that focuses on the target of cyber-bullying being rejected by peers, as opposed to measuring being socially supported by one's peers. Future research may also explore the issue of telling others as a measure of social support or peer rejection. The present study found that of the 208 cyber-bullying target participants, 158 reported telling someone about the incident. This high percentage of telling someone about the incident may explain why this group of participants reported low levels of peer rejection. These findings support the findings of Porhola (2009), who found that having pro-social relationships with peers may moderate the feelings of peer victimization felt by the bully victim.

The *Cyber-bullying Target Scale*, which was developed specifically for this study, indicated a significant relationship between being a target of cyber-bullying and loneliness. These findings add additional support to the strength of this scale as a legitimate measurement tool to assess being the target of cyber-bullying. However, there was no significant relationship

between the cyber-bullying target scale and peer rejection. Once again, this may be due to the high rate of participants telling someone about the cyber-bullying incident. Overall, the findings from the present study support the literature which has found that both loneliness and peer rejection are two results of being bullied (Bond et al., 2001; Light & Dishion, 2007).

Additional Findings. This component of this discussion section has followed the cyber-bullying moderator/mediator model to discuss the results. Additional findings that were not necessarily a part of the testing of the model will be discussed next.

The present study found for H2 that females do not find themselves to be cyber-bullied more often than males, which is discussed next.

Females will be cyber-bullied more often than males. There was no significant support found for this hypothesis. Females and males seem to be bullied at the same rate. This supports the literature which has primarily reported no significant sex differences for social aggression or bullying (Coyne, Archer, & Eslea, 2006; Loukas et al., 2005; Slonje & Smith, 2008; Ybarra & Mitchell, 2004). Future research may focus on sex differences across a variety of contexts such as: frequency of the cyber-bullying message, levels of secondary effects (emotional, academic, and social), and self-reports on being a bully.

The present study found for H3(b) that attachment style is an important predictor in whether or not a target of cyber-bullying tells someone else about the incident, which is discussed next.

Individuals who report being targets of cyber-bullying and who possess a secure attachment style will be more likely to tell someone about the cyber-bullying incident than individuals who report being targets of cyber-bullying and who possess an insecure attachment style. Recall that the literature has shown that telling someone about a bullying

incident may decrease the risk for loneliness, peer rejection, and social difficulties (Kochenderfer-Ladd & Skinner, 2002). It was important to determine whether an individual's attachment style has an impact on the likelihood of a cyber-bullying target telling someone about the incident. The results from the Chi-square test conducted for this study indicate that whether an individual has a secure or insecure attachment style has no significance in whether that individual will tell others about the cyber-bullying incident. Future research may focus on comparing attachment styles across a variety of cyber-bullying contexts such as: being a bully and/or frequency of cyber-bullying incidents.

The present study found for H8 that female cyber-bullying targets do not experience greater discrepancy than male cyber-bullying targets, which is discussed next.

Females who report being targets of cyber-bullying will experience greater Actual-Self and Actual-Other self-guides discrepancy than male targets of cyber-bullying. Research has indicated that there may be socialization differences between males and females with regard to self-discrepancy (Higgins, 1987). However, the findings from this study found no significant difference between females and males with regard to discrepancy. This finding seems to be more in line with general findings within the bullying literature that there are no significant sex differences (Ybarra & Mitchell, 2004; Coyne, et al., 2006). Future research into sex differences may lend additional support to the idea that few sex differences exist when it come to cyber-bullying.

Results from both H2 as well as H8 show that biological sex is not a significant factor with regard to the variables measured for this study. This may indicate that cyber-space is the great equalizer, which would make creating prevention tools and intervention strategies easier since they could be applicable across the sexes.

Implications

The findings from this study provide a unique exploration into the area of cyber-bullying. While many studies in this area have been exploratory in nature, seeking to uncover general information about the act of cyber-bullying, this study focuses on working through the specific process that occurs between receiving a cyber-bullying message and the secondary effects exhibited by the target. This study is unique in that it follows a clearly defined psychological process that is set forth in a theoretically-based and practical model specifically designed for this project. This model is highly useful for future researchers and studies in a variety of contexts. Because of the strong theoretical foundation this study has, researchers in other areas that use theories such as have been set forth in the present study, can easily parlay what was learned from this study into their own. Overall, the findings from this study provide an important foundation from which future studies into the area of verbal aggression, bullying, or cyber-bullying can expand an understanding of the process experienced in cyber-bullying.

Specifically, this study focuses on cyber-bullying effects in an interpersonal, computer-mediated-communication context. "Although cyberbullying inherently implicates important aspects of the communication process, scholars interested in computer-mediated communication have been slow to investigate this phenomenon" (Ramirez, Eastin, Chakroff, et al., 2008, abstract).

Within the field of Communication, the area of Interpersonal Communication has also been limited in its exploration of cyber-bullying. However, Interpersonal Communication researchers have examined concepts that may be involved in the act of cyber-bullying (Vangelisti, Maguire, Alexander, & Clark, 2007).

Vangelisti, et al (2007), have examined hurtful messages and their link to effects such as anxiety. Appraisals such as intentionality have been found to be linked to the degree of hurt one feels when faced with a hurtful message such that occurs when being cyber-bullied (Vangelisti & Young, 2000). Attachment styles have also been examined for their significance within a hurtful communication exchange. According to Vangelisti (2007), "attachment orientation may predispose individuals to have certain expectations about being hurt and, in turn, to interpret hurtful situations in accordance with those expectations" (p. 130). Finally, Vangelisti (2004) explains that feeling hurt my be due to discrepancies an individual may experience within the self after receiving a hurtful message.

The findings from the present study hold implications for the area of Interpersonal Communication in several ways. Appraisals, attachment styles, hurtful messages, and discrepancies which are some of the concepts studied by Interpersonal Communication researchers, are all elements in the cyber-bullying process that emerged within the present study with varying degrees of significance.

The results of this study indicate that the effects of cyber-bullying are real and can still be felt into young adulthood. These results support Willard (2007), Huesmann et al. (2003), and Strom (2005), who found that effects from being bullied may continue into adulthood. The participants for the present study were young adults who were asked to recall a specific cyber-bullying event that occurred and reflect on the effects that event had on them. Although no questions were asked about the participants' present emotional or social states, the ability to recall the negative emotional, academic, and social effects they experienced, speak to the possibility that participants are still feeling these emotions when cued.

Theoretical advancements were made through this study as well. Clearly, Attachment Theory (Bowlby, 1969) is a useful lens from which to view the act of cyber-bullying. While some research has shown an insecure attachment style may be linked to a victim schema in the individual, causing a target of cyber-bullying to react to the message in a helpless manner, the present study shows a secure attachment style is a stronger predictor of anxiety, depression, and in some cases, loneliness.

The Social information processing (SIP) model (Crick & Dodge, 1994) was supported and advanced through the present study as well. SIP was measured through mental representations created by the target of a cyber-bullying message as well as through appraisals. Although this study shows individuals do have limited mental representations regarding cyber-bullying, these unfamiliar mental representations did not seem to contribute to the secondary effects in a meaningful way. In support of SIP, Lazarus and Folkman (1986) suggest stress increases when individuals feel they have insufficient information to deal with a situation adequately. Further research into the area of cyber-bullying and SIP is necessary to advance these ideas.

Appraisal theory was highly useful for this study and warrants further examination by future researchers. Dillard et al. (1996) define appraisals as judgments of the implications of an event. This study has shown clearly that several of the appraisals tested were significantly linked to anxiety, depression, loneliness, and in some instances, peer rejection.

Finally, although a discrepancy between the actual-self and actual-other guides of participants for this study was found, this discrepancy did not seem to create enough dissonance to warrant significant emotional, social, or academic outcomes. Self-Discrepancy theory (Higgins, 1987, 1989) offers a useful model that allows researchers to understand further the

cognitive imbalance that occurs when an individual receives conflicting beliefs about the self. This model warrants further research in the future with regard to the area of cyber-bullying, testing possibly other combination of self-guides, which may produce different affective outcomes.

Practical implications can be gleaned from this study for lawmakers, school officials, parents, adolescents, and young adults. These practical implications have recently had personal meaning for me as the primary researcher of this study. In my small home town, a few short weeks ago, a 14-year old classmate of my daughters committed suicide after allegedly being bullied at school. The alleged bully was a 17-year old classmate of my other two children. This incident turned our town and many of the families that live here upside down. I have personally experienced the devastation that can occur in the lives and families of both the target and the bully. I have seen the loyalty that can be displayed for both victim and perpetrator. The need for further information on how to prevent acts of bullying, care for the needs of those who have been bullied, and provide suggestions on how to be sensitive to the need for privacy when families are faced with such a transgression is great.

Future research may include a comparison of the effects of cyber-bullying and the effects of face-to-face bullying. Patchin and Hinduja (2006) found that cyber-bullying causes distress; however how this distress compares to face-to-face bullying is not certain.

Conclusions

This study of the psychological process and effects of cyber-bullying provides the field of Communication with a better understanding of a portion of the cyber-bullying process, specifically from message exposure to secondary effects. This study also provides an empirical view of a topic most researchers have examined from a qualitative lens. This study also

contributes to the body of Communication literature by developing and successfully testing both a new measurement tool and a model that has tremendous use and practical value for future researchers to conduct further studies into the area of cyber-bullying. This study explored how cyber-bullying messages are mediated and moderated, resulting in emotional, social, and academic effects. It has been clearly shown through this study that adolescents and young adults who find themselves to be a target of a cyber-bullying message find that message to be negative and experience negative effects. Finally, this study has reminded readers of the critically important nature of cyber-bullying in our society today.

APPENDIX A

Research Information Sheet

Title of Study: *Examination of the Effects of Cyber-Bullying on College-Aged Adolescents and Young Adults: Development and Testing of a Cyber-Bullying Moderator/Mediator Model*

Principal Investigator (PI): Crystal Lin Johnson
Department of Communication
313-577-2943

Purpose:
You are being asked to be in a research study that examines the emotional, academic, and social effects of bullying on adolescents and young adults because you are at least 18 years of age and able to recall recent experiences, if any. This study is being conducted at Wayne State University. The estimated number of study participants to be enrolled at Wayne State University is approximately 300. **Please read this form and ask any questions you may have before agreeing to be in the study.**

In this research study, three types of effects of being bullied are explored. These include the possible emotional, academic and social effects that may occur after being bullied. This research examines emotional effects such as anxiety and depression; academic effects such as attendance and grades; and social effects such as loneliness and peer rejection.

Study Procedures:
If you agree to take part in this research study, you will be asked to either visit a room in the Manoogian Building or the Italian Room in the General Lectures Building on the campus of Wayne State University to complete a packet of surveys that will ask questions about yourself and your recollection of a time when you were bullied, **or** complete the same survey online. The survey packet may take up to 45 minutes to complete. Your participation is voluntary, and you can choose to stop participating in the study at any time. Also, at any point you can choose to skip questions in the survey packet that you prefer not to answer. Your name will not be collected and at no time will your identity be made available with any public or published results of the study.

Benefits
As a participant in this research study, there may be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks
By taking part in this study, you may experience the following risks:

- Emotional risk: Recalling past bullying incidents may produce or increase feelings of sadness and/or anxiety.

There may also be risks involved from taking part in this study that are not known to researchers at this time.

Costs

- There will be no costs to you for participation in this research study.

Compensation:
You will likely receive extra credit points in your Communication class for taking part in this research study or receive a $15 gift card for your time and inconvenience.

Confidentiality:

- All information collected about you during the course of this study will be kept without any identifiers.

Voluntary Participation /Withdrawal:
Taking part in this study is voluntary. You have the right to choose not to take part in this study. You are free to only answer questions that you want to answer. You are free to withdraw from participation in this study at any time. Your decisions will not change any present or future relationship with Wayne State University or its affiliates, or other services you are entitled to receive.

The PI may stop your participation in this study without your consent. The PI will make the decision and let you know if it is not possible for you to continue. The decision that is made is to protect your health and safety, or because you did not follow the instructions to take part in the study

Questions:

If you have any questions about this study now or in the future, you may contact Crystal L. Sears or Professor Terry A. Kinney in the Communication Department at Wayne State University (terrykinney@wayne.edu) at (313) 577-5493. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:
By completing the survey packet you are agreeing to participate in this study.

APPENDIX B

PLEASE TELL US ABOUT YOURSELF:

☐ Male ☐ Female What is your age in years? _____

Year in School:
1._____ Not in school
2._____ 1st Year
3._____ 2nd Year
4._____ 3rd Year
5._____ 4th Year
6._____ 5th Year, or higher

Race/Ethnicity:
1._____African American/Black
2._____Arab American
3._____Asian American
4._____European American/White
5._____Hispanic American
6._____Native American
7._____Other: _____

Most of the questions are about **your life in the past.** So when you answer, you should think of how it has been in the past and **not only how it is just now.**
Before we start with questions about cyber-bullying, we will remind you of the definition for the term cyber-bullying.
Bullying consists of verbal or written messages or photos or videos delivered to you directly by another person or sent to others about you that you have been made aware of that:

1. you find to be mean/hostile, hurtful, abusive or coercive;
2. make fun of you;
3. cast you negatively such as calling you names; or
4. are lies or spread false rumors about you.

Cyber-bullying **is carried out via some form of media such as:**

- text messaging
- pictures/photos or video clips
- phone calls (mean, silent, etc.)
- email
- chat rooms
- instant messaging
- Social Networking Websites (posted/sent through Facebook, MySpace, Twitter, Live Journal, or similar social networking sites)

Remember:
When we talk about cyber-bullying, these things happen more than once.
We don't call it cyber-bullying when the messages are said in a friendly and/or playful manner (such as being teased).
Cyber-bullying messages or images must be deliberate and intended to harm you in some way.
Cyber-bullying can happen through messages **sent to you**, but also when messages **are sent to others about you (that you have become aware of)**.

Now we would like you to recall your most memorable cyber-bullying experiences. If you know who the bully was, think of this **person** who cyber-bullied you. Write the initials of this person on this line: _____. If you do not know who bullied you, **skip the next six (6) questions** and go to the next page.

Instructions: Following are a series of questions. Using the scale below, please answer the questions by circling the appropriate number.

1. How important was the bully in your life **BEFORE** s/he started to bully you?

1	2	3	4	5	6	7
Not Very Important			Not Sure			Very Important

2. How involved was the bully in your life **BEFORE** s/he started to bully you?

1	2	3	4	5	6	7
Not Very Involved			Not Sure			Very Involved

3. How much power did the bully hold over you **BEFORE** s/he started to bully you?

1	2	3	4	5	6	7
No Power			Not Sure			A Lot of Power

4. **DURING** the time that the bully was bullying you, how important was the bully in your life?

1	2	3	4	5	6	7
Not Very Important			Not Sure			Very Important

5. **DURING** the time that the bully was bullying you, how involved was the bully in your life?

1	2	3	4	5	6	7
Not Very Involved			Not Sure			Very Involved

6. **DURING** the time that the bully was bullying you, how much power did the bully hold over you?

1	2	3	4	5	6	7
No Power			Not Sure			A Lot of Power

Are you still being bullied by this person? YES _____ NO _____

If you are still being bullied, skip questions 7-9

7. If the bully has stopped bullying you, how important is the bully in your life **NOW**?

1	2	3	4	5	6	7
Not Very Important			Not Sure			Very Important

8. If the bully has stopped bullying you, how involved is the bully in your life **NOW**?

1	2	3	4	5	6	7
Not Very Involved			Not Sure			Very Involved

9. If the bully has stopped bullying you, how much power does the bully hold over you **NOW**?

1	2	3	4	5	6	7
No Power			Not Sure			A Lot of Power

Please continue to recall the person who cyber-bullied you, or if you don't know who bullied you, your cyber-bullying experience. On the following lines, **list or describe THE ACTUAL CYBER-BULLYING MESSAGES or IMAGES/VIDEOS as accurately as you can**.

In other words, what has this person said or sent to you to make you think that you have been bullied?

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Now, please CIRCLE the one message that hurt or bothered you the most.

Next, please place an ASTERISK (*) to the left of the one message that is the most recent.

Now, keeping in mind the cyber-bullying messages you just wrote in the section above, please answer the following:

1. The messages I received made me want to direct my attention to the sender.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

2. The messages I received made me want to focus on the sender.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

3. The messages I received made me give all my attention to the sender.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

4. The messages I received were enjoyable.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

5. The messages I received were pleasant.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

6. The messages I received were important to me.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

7. The messages I received mattered to me.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

8. The messages I received were significant to me.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

9. The messages I received made me feel powerful.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

10. The messages I received made me feel strong.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

11. The messages I received made me feel empowered.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

12. The messages I received were reasonable.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

13. The messages I received were unfair.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

14. The messages I received were unjust.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

15. The messages I received made it hard to predict what would happen next.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

16. The messages I received made it hard to understand what was happening.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

17. The messages I received made me feel confused.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

18. The messages I received were aggressive.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

19. The messages I received were hostile.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

20. The messages I received were intentional.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

21. The messages I received were deliberate.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

22. The messages I received were on purpose.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

23. The messages I received were hurtful.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

24. The messages I received were mean.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

25. The messages I received were explicit.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

26. The messages I received were straightforward.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

27. The messages I received were clear.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

28. The messages I received made me feel dominated.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

29. The messages I received made me feel in charge.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

30. The messages I received made me feel controlled.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

31. The messages I received were challenging.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

32. The messages I received were intense.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

33. The messages I received felt familiar.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

34. The messages I received made me feel threatened.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

35. The messages I received were disturbing.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

General Cyber-bullying Questionnaire

Please answer the following questions about cyber-bullying:

1.	How often **have you been cyber-bullied in the past**?	1. _____ 1-2 times 2. _____ 2-3 times 3. _____ about once per week 4. _____ several times
2.	Have you known someone who has been **cyber-bullied**?	1. _____ No, I have not known someone who has been bullied 2. _____ Yes, I have known someone who has been cyber-bullied
3.	Have you heard of someone who has been **cyber-bullied**?	1. _____ No, I have not heard of someone who has been bullied 2. _____ Yes, I have heard of someone who has been cyber-bullied
4.	Have you talked to someone who knows about **cyber-bullying**?	1. _____ No, I have not talked to someone who knows about cyber-bullying 2. _____ Yes, I have talked to someone who knows about cyber-bullying
5.	Do you know what to do when you are **cyber-bullied**?	1. _____ No, I do not know what to do when I am cyber-bullied 2. _____ Yes, I know what to do when I am cyber-bullied
6.	Do you think cyber-bullying **compared to** "normal, traditional, conventional, face-to-face" bullying…	1. _____ has less of an effect on the target 2. _____ has the same effect on the target 3. _____ has more of an effect on the target 4. _____ I do not know
7.	Have you been **cyber-bullied** by males or females?	1. _____ mainly by 1 female 2. _____ by several females 3. _____ mainly by 1 male 4. _____ by several males 5. _____ by both females and males 6. _____ I do not know who sent me the cyber-bullying messages

Please continue to answer the following questions about cyber-bullying:

8.	Have you told anyone (that you have been **cyber-bullied**)?	1. _____ A teacher/guidance counselor 2. _____ Another adult ***other than your parent/guardian*** 3. _____ A parent/guardian 4. _____ Your friend/s 5. _____ Somebody else 6. _____ I told nobody
9.	By how many individuals have you been **cyber-bullied**?	1. _____ Mainly by 1 individual 2. _____ By a group of 2-3 individuals 3. _____ By a group of 4-9 individuals 4. _____ By a group of more than 9 individuals 5. _____ By several different individuals or groups of individuals 6. _____ I do not know who sends the cyber-bullying messages
10.	When did you realize you were being **cyber-bullied**?	1. _____ after the first message 2. _____ after messages 2-3 3. _____ after messages 4 or more
11.	What is your relationship to the bully?	1. _____ Current friend 2. _____ Former friend 3. _____ Current romantic partner 4. _____ Former romantic partner 5. _____ Acquaintance 6. _____ Current co-worker 7. _____ Former co-worker 8. _____ Relative 9. _____ Parent 10. _____ Other (please specify): _____ _____

Please continue to answer the following questions about cyber-bullying:

12.	Where did the **cyber-bullying** occur?	1. _____ School 2. _____ Work 3. _____ Home 4. _____ Other
13.	Were you attending school when the **cyber-bullying** occurred?	1. _____ Yes, I was in junior high 2. _____ Yes, I was in high school 3. _____ Yes, I was in college 4. _____ No, I was not attending school at the time
14.	If you were attending school when the **cyber-bullying** occurred, did the bullying affect your **attendance**?	1. _____ No, absences did not increase 2. _____ Yes, absences increased
15.	If you were attending school when the **cyber-bullying** occurred, did the bullying affect your **grades**?	1. _____ No, my grades did not drop 2. _____ Yes, my grades dropped
16.	At the time you were **cyber-bullied**, did you know who the bully was?	1. _____ Yes, I knew who the bully was 2. _____ No, I did not know who the bully was
17.	After you were **cyber-bullied**, did you know who the bully was?	1. _____ Yes, I knew who the bully was 2. _____ No, I did not know who the bully was
18.	Please estimate how many times the **cyber-bullying** messages were sent to you, or forwarded, or viewed by others	1. _____ 2-3 times 2. _____ 4-10 times 3. _____ 11-20 times 4. _____ 21-50 times 5. _____ 51-100 times 6. _____ More than 100 times
19.	Have you ever **cyber-bullied** someone else?	1. _____ Yes, I have cyber-bullied 2. _____ No, I have not cyber-bullied
20.	How many people have you **cyber-bullied**?	1. _____ 1 person 2. _____ 2-3 people 3. _____ 4-10 people 4. _____ More than 10 people
21.	Where did you know the person you **cyber-bullied** from?	1. _____ School 2. _____ Work 3. _____ Home 4. _____ Other

Now, please **compare the types of cyber-bullying**

22.	Which of the following types of **cyber-bullying** did you find most disturbing?	1. _____ Text messaging 2. _____ Picture/video-clip messaging 3. _____ Instant messaging 4. _____ Chat-room messaging 5. _____ Email messaging 6. _____ Social networking messaging 7. _____ I Don't Know

Other forms of cyber-bullying

23.	Are there any other forms of bullying involving the internet, mobile phones or any other electronic devices, which we have not mentioned?	1. _____ No 2. _____ Yes (please describe) _____ _____ _____ _____ _____ _____ _____

Instructions: Following are a series of statements. Using the scale below, please indicate how you felt about each statement **IN THE PAST** by circling the appropriate number.

1. In the past, I have been cyber-bullied a lot.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

2. In the past, I think that I have been cyber-bullied a great deal.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

3. In the past, my experiences with being cyber-bullied are minimal.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

4. In the past, I have been cyber-bullied by the specific person or someone whom I am recalling for this survey a lot.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

5. In the past, I think that I have been cyber-bullied by the person or someone whom I am recalling for this survey a great deal.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

6. In the past, my experiences with being cyber-bullied by the person or someone whom I am recalling for this survey are minimal.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

Please continue to respond to the following statements: Using the scale below, please indicate how you felt about each statement **IN THE PAST** by selecting the appropriate response.

7. In the past, in general, I have been cyber-bullied by the specific person or someone whom I am recalling for this survey:

   _____ less than once a week
   _____ once a week
   _____ a few times a week
   _____ once a day
   _____ more than once a day

8. In the past, please estimate how many times you have received a cyber-bullying message from the person or someone whom you are recalling for this survey.

   On average, about how many times per week? _____

   On average, about how many times per day? _____

9. In the past, please estimate about how many times a cyber-bullying message about you has been sent to others from the person or someone whom you are recalling for this survey.

   On average, about how many times per week? _____

   On average, about how many times per day? _____

Instructions: Following are a series of adjectives that can be used to describe individuals. Using the scale below please indicate the extent to which **you currently describe and think about yourself as actually possessing each characteristic** by circling the appropriate number. Circling a number closer to a word suggests that you believe you are more like that word.

I BELIEVE I AM….

1.	Intelligent	1	2	3	4	5	6	7	Ignorant
2.	Creative	1	2	3	4	5	6	7	Not Creative
3.	Attractive	1	2	3	4	5	6	7	Unattractive
4.	Moral	1	2	3	4	5	6	7	Immoral
				*	*	*	*		
5.	Unsuccessful	1	2	3	4	5	6	7	Successful
6.	Incompetent	1	2	3	4	5	6	7	Competent
7.	A Bad Person	1	2	3	4	5	6	7	A Good Person
8.	Untruthful	1	2	3	4	5	6	7	Truthful
				*	*	*	*		
9.	Friendly	1	2	3	4	5	6	7	Unfriendly
10.	Sociable	1	2	3	4	5	6	7	A Loner
11.	Trusting	1	2	3	4	5	6	7	Untrusting

12.	Socially Skillful	1	2	3	4	5	6	7	Socially Unskillful
				*	*	*	*		
13.	Unconcerned for Others	1	2	3	4	5	6	7	Concerned for Others
14.	An Unhappy Person	1	2	3	4	5	6	7	A Happy Person
15.	Unconfident	1	2	3	4	5	6	7	Confident
16.	Unable to Handle Personal Problems	1	2	3	4	5	6	7	Able to Handle Personal Problems
				*	*	*	*		
17.	Exciting	1	2	3	4	5	6	7	Dull
18.	Strong	1	2	3	4	5	6	7	Weak
19.	Expressive	1	2	3	4	5	6	7	Unexpressive
20.	Passive	1	2	3	4	5	6	7	Aggressive
				*	*	*	*		
21.	Selfish	1	2	3	4	5	6	7	Giving
22.	Uncaring	1	2	3	4	5	6	7	Caring
23.	Unpopular	1	2	3	4	5	6	7	Popular
24.	A Bad	1	2	3	4	5	6	7	A Good

	Partner							Partner
			*	*	*	*		
25.	Part of an Important Group	1	2	3	4	5	6	7 Not Part of an Important Group
26.	Contributing Member of Society	1	2	3	4	5	6	7 Non-Contributing Member of Society

Recall the cyber-bullying messages from earlier.

Instructions: Following are a series of adjectives that can be used to describe individuals. Using the scale below please indicate the extent to which **you believe the bully thinks you possess each characteristic** by circling the appropriate number. Circling a number closer to a word indicates that you think that the bully believes that you possess more of that characteristic than the opposite word.

I BELIEVE THE BULLY THINKS I AM…

1.	Intelligent	1	2	3	4	5	6	7	Ignorant
2.	Creative	1	2	3	4	5	6	7	Not Creative
3.	Attractive	1	2	3	4	5	6	7	Unattractive
4.	Moral	1	2	3	4	5	6	7	Immoral
				*	*	*	*		
5.	Unsuccessful	1	2	3	4	5	6	7	Successful
6.	Incompetent	1	2	3	4	5	6	7	Competent
7.	A Bad Person	1	2	3	4	5	6	7	A Good Person
8.	Untruthful	1	2	3	4	5	6	7	Truthful
				*	*	*	*		
9.	Friendly	1	2	3	4	5	6	7	Unfriendly
10.	Sociable	1	2	3	4	5	6	7	A Loner
11.	Trusting	1	2	3	4	5	6	7	Untrusting

12.	Socially Skillful	1	2	3	4	5	6	7	Socially Unskillful
				*	*	*	*		
13.	Unconcerned for Others	1	2	3	4	5	6	7	Concerned for Others
14.	An Unhappy Person	1	2	3	4	5	6	7	A Happy Person
15.	Unconfident	1	2	3	4	5	6	7	Confident
16.	Unable to Handle Personal Problems	1	2	3	4	5	6	7	Able to Handle Personal Problems
				*	*	*	*		
17.	Exciting	1	2	3	4	5	6	7	Dull
18.	Strong	1	2	3	4	5	6	7	Weak
19.	Expressive	1	2	3	4	5	6	7	Unexpressive
20.	Passive	1	2	3	4	5	6	7	Aggressive
				*	*	*	*		
21.	Selfish	1	2	3	4	5	6	7	Giving
22.	Uncaring	1	2	3	4	5	6	7	Caring
23.	Unpopular	1	2	3	4	5	6	7	Popular
24.	A Bad Partner	1	2	3	4	5	6	7	A Good Partner
				*	*	*	*		

25.	Part of an Important Group	1	2	3	4	5	6	7 Not Part of an Important Group
26.	Contributing Member of Society	1	2	3	4	5	6	7 Non-Contributing Member of Society

Instructions: Following are a series of statements. Using the scale below, please indicate how you felt about each statement **NOT TODAY, BUT *SHORTLY AFTER* you received the cyber-bullying messages** by circling the appropriate number.

1. Shortly after I was bullied, there was a special person who was around when I was in need:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

2. Shortly after I was bullied, there was a special person with whom I could share joys and sorrows:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

3. Shortly after I was bullied, my family really tried to help me:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

4. Shortly after I was bullied, I got the emotional help and support I needed from my family:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

5. Shortly after I was bullied, I had a special person who was a source of comfort to me:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

6. Shortly after I was bullied, my friends really tried to help me:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

7. Shortly after I was bullied, I could count on my friends when things went wrong:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

8. Shortly after I was bullied, I could talk about my problems with my family:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

9. Shortly after I was bullied, I had friends with whom I could share my joys and sorrows:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

10. Shortly after I was bullied, there was a special person in my life who cared about my feelings:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

11. Shortly after I was bullied, my family was willing to help me make decisions:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

12. Shortly after I was bullied, I could talk about my problems with my friends:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

Instructions: Following are a series of statements. Using the scale below, please indicate how you felt about each statement **NOT TODAY, BUT *shortly after* the time you were being cyber-bullied** by circling the appropriate number.

1. Shortly after I was bullied, I found it difficult to allow myself to depend on others:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

2. Shortly after I was bullied, I felt people were never there when I needed them:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

3. Shortly after I was bullied, I was comfortable depending on others:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

4. Shortly after I was bullied, I knew that others would be there when I needed them:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

5. Shortly after I was bullied, I found it difficult to trust others completely:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

6. Shortly after I was bullied, I was not sure I could always depend on others to be there when I needed them:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

7. Shortly after I was bullied, I often worried about being abandoned:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

8. Shortly after I was bullied, I often worried that important people in my life did not really love me:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

9. Shortly after I was bullied, I found others were reluctant to get as close as I would like:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

10. Shortly after I was bullied, I often worried important people in my life would not want to stay with me:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

11. Shortly after I was bullied, I wanted to merge completely with another person:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

12. Shortly after I was bullied, my desire to merge completely with another person sometimes scared people away:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

13. Shortly after I was bullied, I found it relatively easy to get close to others:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

14. Shortly after I was bullied, I did not often worry about someone getting close to me:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

15. Shortly after I was bullied, I was somewhat uncomfortable being close to others:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

16. Shortly after I was bullied, I was nervous when anyone got too close:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

17. Shortly after I was bullied, I was comfortable having others depend on me:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

18. Shortly after I was bullied, I found that love partners wanted me to be more intimate than I felt comfortable being:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

Recall the cyber-bullying messages from earlier.

Instructions: Following are a series of statements. Using the scale below, please indicate how you felt about each statement ***shortly after*** **you received the cyber-bullying messages** by circling the appropriate number.

1. Shortly after I was bullied, I felt tense or "wound up":

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

2. Shortly after I was bullied, I still enjoyed the things I used to enjoy:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

3. Shortly after I was bullied, I would get a frightened feeling as if something awful was about to happen:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

4. Shortly after I was bullied, I could laugh and see the funny side of things:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

5. Shortly after I was bullied, worrying thoughts would go through my mind:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

6. Shortly after I was bullied, I felt cheerful:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

7. Shortly after I was bullied, I could sit at ease and feel relaxed:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

8. Shortly after I was bullied, I felt as though I was slowed down:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

9. Shortly after I was bullied, I would get a sort of frightened feeling like "butterflies" in the stomach:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

10. Shortly after I was bullied, I lost interest in my appearance:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

11. Shortly after I was bullied, I felt restless as if I had to be on the move:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

12. Shortly after I was bullied, I looked forward with enjoyment to things:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

13. Shortly after I was bullied, I would get sudden feelings of panic:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

14. Shortly after I was bullied, I could enjoy a good book or TV program:

0	1	2	4
Strongly Disagree	Disagree	Agree	Strongly Agree

Recall the cyber-bullying messages from earlier.

Instructions: Following are a series of statements. Using the scale below, please indicate how you felt about each statement ***shortly after*** **you received the cyber-bullying messages** by circling the appropriate response.

1. Shortly after I was bullied, I felt restless, keyed up, or on edge:

   Yes No

2. Shortly after I was bullied, I was easily fatigued:

   Yes No

3. Shortly after I was bullied, I had difficulty concentrating:

   Yes No

4. Shortly after I was bullied, I felt irritable:

   Yes No

5. Shortly after I was bullied, I felt muscle tension:

   Yes No

6. Shortly after I was bullied, I experienced sleep disturbance (difficulty falling or staying asleep, or restless/unsatisfying sleep):

   Yes No

Recall the cyber-bullying messages from earlier.

Instructions: Following are a series of questions. Using the scale below, please indicate how you felt about each statement ***shortly after*** **you received the cyber-bullying messages** by circling the appropriate response.

1. Shortly after I was bullied, I felt in a depressed mood most of the day:

   Yes No

2. Shortly after I was bullied, I had diminished interest or pleasure in all, or almost all, activities:

   Yes No

3. Shortly after I was bullied, I had at least one of the following occur: significant weight loss/weight gain or an increase/decrease in appetite:

   Yes No

4. Shortly after I was bullied, I slept too much or too little:

   Yes No

5. Shortly after I was bullied, I felt restless or weighted down:

   Yes No

6. Shortly after I was bullied, I experienced fatigue or loss of energy:

   Yes No

7. Shortly after I was bullied, I had feelings of worthlessness or guilt:

   Yes No

8. Shortly after I was bullied, I could not concentrate or was indecisive:

   Yes No

Recall the cyber-bullying messages from earlier.

Instructions: Following are a series of statements. Using the scale below, please indicate how you felt about each statement ***shortly after*** **you received the cyber-bullying messages** by circling the appropriate number.

1. Shortly after I was bullied, I found it easy for me to make new friends:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

2. Shortly after I was bullied, I had nobody to talk to in my class:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

3. Shortly after I was bullied, I was good at working with other people:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

4. Shortly after I was bullied, it was hard for me to make friends:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

5. Shortly after I was bullied, I had a lot of friends:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

6. Shortly after I was bullied, I felt alone:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

7. Shortly after I was bullied, I could find a friend when I needed one:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

8. Shortly after I was bullied, it was hard to get people to like me:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

9. Shortly after I was bullied, I didn't have anyone to socialize with:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

10. Shortly after I was bullied, I got along with others:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

11. Shortly after I was bullied, I felt left out:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

12. Shortly after I was bullied, there were no other people I could go to when I needed help:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

13. Shortly after I was bullied, I didn't get along with other people:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

14. Shortly after I was bullied, I was lonely:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

15. Shortly after I was bullied, I was well liked by others:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

16. Shortly after I was bullied, I didn't have any friends:

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

Recall the cyber-bullying messages from earlier.

Instructions: Following are a series of statements. Using the scale below, please indicate how you felt about each statement **NOT TODAY, BUT *SHORTLY AFTER* you received the cyber-bullying messages** by circling the appropriate number.

1. Shortly after I was bullied, I felt in tune with the people around me.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

2. Shortly after I was bullied, I lacked companionship.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

3. Shortly after I was bullied, there was no one I could turn to.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

4. Shortly after I was bullied, I did not feel alone.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

5. Shortly after I was bullied, I felt part of a group of friends.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

6. Shortly after I was bullied, I had a lot in common with the people around me.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

7. Shortly after I was bullied, I was no longer close to anyone.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

8. Shortly after I was bullied, my interests and ideas were not shared by those around me.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

9. Shortly after I was bullied, I was an outgoing person.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

10. Shortly after I was bullied, there were people I felt close to.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

11. Shortly after I was bullied, I felt left out.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

12. Shortly after I was bullied, my social relationships were superficial.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

13. Shortly after I was bullied, no one really knew me well.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

14. Shortly after I was bullied, I felt isolated from others.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

15. Shortly after I was bullied, I could find companionship when I wanted it.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

16. Shortly after I was bullied, there were people who really understood me.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

17. Shortly after I was bullied, I was unhappy being so withdrawn.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

18. Shortly after I was bullied, people were around me but not with me.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

19. Shortly after I was bullied, there were people I could talk to.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

20. Shortly after I was bullied, there were people I could turn to.

1	2	3	4	5	6	7
Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree

APPENDIX C

Table C1

Demographic Data of Cyber-Bullying Research Participants presented in Percentages and Frequencies

Demographic	Percentage	Frequency
Sex:		
Male	33	68
Female	67	139
Current age:		
17 – 19	40.8	85
20 – 24	36.4	74
25 – 29	13.5	28
30 – 34	2.9	6
35 – 39	2.0	4
40 – up	3.0	6
Year in school:		
Not in school	0	0
1st Year	26.2	54
2nd Year	26.2	54
3rd Year	18.0	37
4th Year	17.5	36
5th Year, or higher	12.1	25
Race/Ethnicity:		
African American/Black	27.1	56
Arab American	6.8	14
Asian American	4.8	10
European American/White	52.7	109
Hispanic American	5.3	11
Native American	.5	1
Other	2.9	6

Table C2

Results of Testing Hypothesis 1(a): Being the target of cyber-bullying will be correlated positively with anxiety and depression

	Secondary Effects Variables			
Cyber-bullying Target Variables	HADS Anxiety	DSM-IV Anxiety	HADS Depression	DSM-IV Depression
Cyber-bullying Target Scale	.35(173) □	.02(171)	.35(175) □	.10(175)
How often have you been cyber-bullied in the past?	.23(178) **	.11(176)	.14(179)	.19(180) **
By how many individuals have you been cyber-bullied?	.18(163) *	.05(161)	.15r(164)	.11(164)
When did you realize you were being cyber-bullied?	.07(177)	.08(175)	.03(178)	.12(179)
Please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others	.29(177) □	.23(175)**	.11(178)	.25(179)□

* $p < .05$; ** $p < .01$; □ $p < .001$.
Note. Cell entries are Pearson correlations and degrees of freedom (r(df)).

Table C3

Results of Testing Hypothesis 1(b): Being the target of cyber-bullying will be correlated positively with absences and negatively with grades

	Secondary Effects Variables	
Cyber-bullying Target Variables	Absences	Grades
Cyber-bullying Target Scale	.13(181)	-.16(181) *
How often have you been cyber-bullied in the past?	.16(189)*	-.10(189)
By how many individuals have you been cyber-bullied?	.09(188)	.04(188)
When did you realize you were being cyber-bullied?	.03(188)	-.11(188)
Please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others	.21(188)**	-.24(188)**

* $p < .05$; ** $p < .01$; □ $p < .001$.

Note. Cell entries are Spearman rho correlations and degrees of freedom (r(df)).

Table C4

Results of Hypothesis 1(c): Being the target of cyber-bullying will be correlated positively with loneliness and peer rejection

	Secondary Effects Variables		
Cyber-bullying Target Variables	CLQ Loneliness	UCLA Loneliness	Peer Rejection
Cyber-bullying Target Scale	.66(166)□	.54(166) □	-.09(166)
How often have you been cyber-bullied in the past?	.23(170)*	.16(171) *	.17(170)*
By how many individuals have you been cyber-bullied?	.28169) **	.20(170) **	-.03(159)
When did you realize you were being cyber-bullied?	-.04(169)	-.05(170)	.07(169)
Please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others	.04(170)	.04(170)	.09(169)

* $p < .05$; ** $p < .01$; □ $p < .001$.

Note. Cell entries are Pearson correlations and degrees of freedom (r(df)).

Table C5

Results of Testing Hypothesis 2: Females will be cyber-bullied more often than males

Cyber-bullying Target Variables	Biological Sex	*N*	*M*(SD)	*t* (df)
Cyber-bullying Target Scale	Male Female	63 121	3.85(1.44) 3.74(1.39)	.52(182)
How often have you been cyber-bullied in the past?	Male Female	66 127	1.82(1.0) 1.81(.84)	.05(191)
By how many individuals have you been cyber-bullied?	Male Female	66 125	2.39(1.78) 2.47(1.77)	-0.29(189)
When did you realize you were being cyber-bullied?	Male Female	66 125	1.39(.58) 1.47(.60)	-0.86(189)
Please estimate how many times the cyber-bullying messages were sent to you, or forwarded, or viewed by others	Male Female	65 126	2.12(1.34) 2.34(1.29)	-1.09(189)

Table C6a

Results of Testing Hypothesis 3(b): Individuals who report being targets of cyber-bullying and who possess a secure attachment style will be more likely to tell someone about the cyber-bullying incident than individuals who report being targets of cyber-bullying and who possess an insecure attachment style

Cyber-bullying Target Variables	Attachment Style		
	Secure	Insecure	Totals
Told someone about the cyber-bullying incident	66	79	145
Did not tell someone about the cyber-bullying incident	15	17	32
Total	81	96	177

Note. Cell entries are frequencies.

Table C6b

Results of Testing Hypothesis 3(b): Individuals who report being targets of cyber-bullying and who possess a secure attachment style will be more likely to tell someone about the cyber-bullying incident than individuals who report being targets of cyber-bullying and who possess an insecure attachment style

	Chi-Square Analysis				Total
	Secure&Told	~Secure&Told	Secure&~Told	~Secure&~Told	
fo	*66*	*79*	*15*	*17*	
fe	*66.4*	*78.6*	*14.6*	*17.3*	
fo-fe	*.4*	*.4*	*.4*	*.3*	
$(fo-fe)^2$	*.16*	*.16*	*.16*	*.16*	
$\frac{(fo-fe)^2}{fe}$	*.002*	*.002*	*.01*	*.009*	
					χ^2 (3) = .02, *ns*

Table C7

Results of Testing Hypothesis 4: Individuals who report being a target of cyber-bullying and report being a bully in the past will experience more secondary effects compared to individuals who report only being targets of cyber-bullying

Secondary Effects Variables	Have you ever cyber-bullied someone else?	*N*	*M*(SD)	*t* (df)
Anxiety 1	Yes	61	1.64(.47)	1.20(176) □
	No	117	1.51(.75)	
Anxiety 2	Yes	60	.46(.39)	.54(173)
	No	115	.43(.37	
Depression 1	Yes	61	1.40(.45)	2.24(177)*
	No	118	1.20(.64)	
Depression 2	Yes	62	.40(.40)	-.093(177)
	No	117	.40(.36)	
Peer Rejection	Yes	56	5.04(1.08)	-1.4(168)
	No	114	5.30(1.17)	
Loneliness 1	Yes	61	4.28(1.22)	3.76(168) □
	No	109	3.48(1.39)	
Loneliness 2	Yes	60	4.49(1.10)	3.65(169) □
	No	111	3.74(1.37)	
Absences	Yes	62	1.84(.37)	-.21(187)
	No	127	1.85(.36)	
Grades	Yes	62	1.84(.37)	-.82(187)
	No	127	1.88(.32)	

* $p < .05$; ** $p < .01$; □ $p < .001$.

Table C8

Results of Testing Hypothesis 5(a): Individuals who are targets of cyber-bullying will report higher levels of unfamiliar mental representations (UFMR) regarding cyber-bullying experiences as compared to familiar mental representations (FMR)

Chi-Square Analysis			Total
	FMR	UFMR	
fo	*35*	*159*	
fe	*97*	*97*	
fo-fe	*62*	*62*	
$(fo-fe)^2$	*3844*	*3844*	
$\frac{(fo-fe)^2}{fe}$	*39.6*	*39.6*	
			$\chi^2(1) = 79.3$ □

* $p < .05$; ** $p < .01$; □ $p < .001$.

Table C9

Results of Testing Hypothesis 5(b): Unfamiliar mental representations (UFMR) will account for variance in the set of cyber-bullying secondary effects variables

	Secondary Effects Variables								
	Emotional Effects				Social Effects			Academic Effects	
	HADS Anxiety	DSM -IV Anxiety	HADS Depression	DSM -IV Depression	CLQ Loneli	UCLA Loneli	Peer Reject	Absences	Grades
UFMR	.01	-.08	.01	-.06	.14	.10	-.20	.04	.13
R^2	.01	.01	.01	.01	.02	.01	.04	.01	.02
F	.01	1.07	.02	.641	3.23	1.55	6.94	.24	3.15
(df)	(1,175)	(1,172)	(1,176)	(1,176)	(1,168)	(1,168)	(1,167)	(1,187)	(1,187)

* $p < .005$; . ** $p < .001$

Note. Cell entries are standardized *Betas*. Family-wise error rate = $p < .005$ (.05/9).

Table C10

Results of Testing Hypothesis 6: Message appraisals will account for variance in the set of cyber-bullying secondary effects variables

	Secondary Effects Variables								
	Emotional Effects					Social Effects		Academic Effects	
Appraisals	HADS Anxiety	DSM - IV Anxiety	HADS Depression	DSM -IV Depression	CLQ Loneli	UCLA Loneli	Peer Reject	Absences	Grades
Attnact	-.02	.24*	.01	.15	.12	.17*	-.04	.08	.08
Valence	-.15	-.18	-.05	-.14	-.02	.07	-.11	-.10	.06
Relevant	.22	-.02	.34 □	.15	.50 □	.47 □	-.20	-.22*	-.15
Power	.09	.31**	.08	.29**	-.04	-.05	.05	.08	.12
Legit	.07	-.01	.07	.03	.14*	.05	.08	-.08	-.11
Hostility	.12	.28**	.10	.25**	.06	.18	-.04	.05	-.10
Intention	-.17*	-.22*	-.39 □	-.24**	-.18*	-.02*	.11	.15	.21
Hurtful	.26**	.25**	.21**	.15	-.08	-.10	.04	.07	-.21*
Explicit	.11	.08	-.01	.10	-.08	-.24**	-.04	.03	-.05
Dominan	.18	.07	.13	.14	.22**	.11	.13	.14	-.04
Predict	.21**	.12	.08	.07	-.05	.04	.03	-.07	-.04
Threat	.06	-.33**	.04	-.33**	.21	-.06	.12	-.19	.90
R^2	.43 □	.22 □	.35 □	.21 □	.47 □	.50 □	.09	.10	.07
F (df)	9.36 □ (12,161)	3.32 □ (12,155)	6.80 □ (12,163)	3.36 □ (12,160)	10.51 □ (12,155)	11.68 □ (12,153)	1.15 (12,153)	1.43 (12,171)	1.05 (12,171)

* $p < .05$; ** $p < .01$; □ $p < .001$.

Note. Cell entries are standardized *Betas*.

Table C11

Results of Testing Hypothesis 7: Self-discrepancy (S-D) will account for variance in the set of cyber-bullying secondary effects variables.

	Secondary Effects Variables								
	Emotional Effects					Social Effects		Academic Effects	
	HADS Anxiety	DSM -IV Anxiety	HADS Depression	DSM -IV Depression	CLQ Loneli	UCLA Loneli	Peer Reject	Absences	Grades
S-D	.10	.03	.10	.02	-.11	-.11	.22	.05	.10
R^2	.01	.01	.01	.01	.01	.01	.05	.01	.01
F	1.48	.15	1.52	.05	1.71	1.76	7.07	.40	1.33
(df)	(1,145)	(1,142)	(1,146)	(1,142)	(1,137)	(1,138)	(1,136)	(1,150)	(1,150)

* $p < .005$; . ** $p < .001$

Note. Cell entries are standardized *Betas*. Family-wise error rate = $p < .005$ (.05/9).

Table C12a

Results of Testing Hypothesis 9(a): The set of variables that potentially moderate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying primary effects variables

	Primary Effects						
	Appraisals						
Moderators	Attention	Valence	Relevance	Power	Legitimacy	Predictability	Hostility
Sex	-.12	-.18	-.09	-.24*	-.07	-.09	-.04
Attachment style							
Secure	.33**	.08	.39**	.10	.14	.39**	.23
Insecure	.08	.16	.10	-.02	-.04	-.17	.01
Being Bully	.13	.02	.14	-.02	.07	.03	-.01
R^2	.20**	.08	.26**	.06	.03	.10*	.06
F(df)	9.50(4,160)**	3.62(4,164)	14.25(4,165)**	2.62(4,161)	1.03(4,161)	4.30(4,165)*	2.42(4,164)

* $p < .003$; . ** $p < .001$

Note. Cell entries are standardized *Betas*. Family-wise error rate = $p < .003$ (.05/14).

Table C12b

Cont. Results of Testing Hypothesis 9(a): The set of variables that potentially moderate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying primary effects variables

	Primary Effects						
	Appraisals						
Moderators	Intentionality	Hurtful	Explicit	Dominance	Threat	Mental Reps	Self-Discrepancy
Sex	-.07	-.16	.04	-.08	-.13	.06	.-11
Attachment style							
Secure	.05	.29	-.03	.37**	.49**	.25	-.10
Insecure	-.06	-.06	-.10	-.11	-.20	-.16	.14
Being Bully	.15	.02	-.10	-.02	.00	.09	-.13
R^2	.03	.09	.03	.10*	.16**	.05	.04
F(df)	1.09(4,165)	3.75(4,165)	1.19(4,163)	4.25(4,163)*	7.62(4,165)**	2.10(4,163)	1.31(4,137)

* $p < .003$; . ** $p < .001$

Note. Cell entries are standardized *Betas*. Family-wise error rate = $p < .003(.05/14)$.

Table C13

Results of Testing Hypothesis 9(b): The set of variables that potentially moderate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying secondary effects variables

	Secondary Effects								
Moderators	HADS Anxiety	DSM-IV Anxiety	HADS Depression	DSM-IV Depression	CLQ Loneli	UCLA Lonli	Peer Reject	Absences	Grades
Sex	-.10	-.14	-.13	-.20	.04	-.04	-.15	.04	-.02
Attachment style									
Secure	.60**	.13	.41**	.25	.67**	.54**	-.03	-.15	-.18
Insecure	-.04	.14	.21	.09	.06	.12	-.14	.05	-.02
Being Bully	-.03	.00	.04	-.08	.12	.13	-.11	-.02	.06
R^2	.33**	.07	.34**	.13**	.56**	.45**	.07	.02	.04
F	19.35**	3.06	20.39**	5.96**	48.60**	29.92**	2.85	.67	1.50
(df)	(4,162)	(4,156)	(4,163)	(4,160)	(4,155)	(4,153)	(4,150)	(4,162)	(4,162)

* $p < .005$; ** $p < .001$.

Note. Cell entries are standardized *Betas*. Family-wise error rate = $p < .005(.05/9)$.

Table C14

Results of Testing Hypothesis 10: The set of variables that potentially mediate the relationship between exposure and processing of cyber-bullying messages will account for variance in the set of cyber-bullying secondary effects variables

	Secondary Effects Variables								
	Emotional Effects				Social Effects			Academic Effects	
Mediators	HADS Anxiety	DSM -IV Anxiety	HADS Depression	DSM -IV Depression	CLQ Loneli	UCLA Loneli	Peer Reject	Absences	Grades
Appraisals									
Attnact	-.05	.28	.06	.23	.16	.18	-.10	.08	.05
Valence	-.18	-.30	.05	-.27	.01	.14	-.22	-.11	.03
Releva	.19	-.02	.33**	.17	.42**	.38*	-.10	-.22	-.19
Power	.12	.37**	.01	.32	-.14	-.12	.18	.04	.12
Legit	.15	-.01	.05	.03	.13	-.01	.07	-.12	-.12
Hostility	.05	.37*	.02	.37*	.10	.23	-.12	.14	-.14
Intention	-.15	-.22	-.31*	-.25	-.17	-.02	.18	.16	.14
Hurtful	.23	.29	.20	.22	.03	-.01	-.14	.09	-.18
Explicit	.15	.12	.06	.14	-.11	-.26	-.01	-.01	-.06
Dominan	.18	.05	.13	.11	.21	.11*	.13	.14	-.06
Predict	.19	.19	.08	.11	-.13	-.01	.10	-.06	.04
Threat	.12	-.40*	.02	-.39*	-.01	-.25	.19	-.24	.14
Mental Reps	.04	-.01	.04	-.08	.08	.02	-.18	-.01	.08
Self-Discrep	-.07	-.12	.04	-.07	-.08	-.12	.16	.03	.11
R^2	.42**	.30**	.34**	.27**	.45**	.48**	.19	.12	.10
F	6.09**	3.38**	4.32**	2.97**	6.47**	7.20**	1.79	1.16	.941
(df)	(14,131)	(14,127)	(14,133)	(14,128)	(14,125)	(14,124)	(14,123)	(14,136)	(14,136)

* $p < .05$; ** $p < .01$; □ $p < .001$.

Note. Cell entries are standardized *Betas*.

Table C15

Results of Testing the Overall Moderator/Mediator Model

	Secondary Effects								
	Emotional Effects				Social Effects			Academic Effects	
Predictor variables	HADS Anxiety	DSM -IV Anxiety	HADS Depression	DSM -IV Depression	CLQ Loneli	UCLA Loneli	Peer Reject	Absences	Grades
Block 1									
Sex	-.03	-.13	-.04	-.23**	.02	-.06	-.00	.00	-.04
Att.sty									
Sec	.41 □	.07	.20	.16	.49 □	.33**	.01	-.01	-.20
Ins	.11	.15	.37 □	.12	.15	.19	-.05	-.01	-.03
Be bully	-.01	.03	.03	-.07	.07	.02	-.20*	-.01	.13
R^2	.28 □	.06	.35 □	.13**	.58 □	.43 □	.10*	.01	.07
F	11.44 □	1.85	15.73 □	4.32**	38.71 □	20.92 □	2.94*	.44	2.15
(df)	(4,121)	(4, 118)	(4,123)	(4,119)	(4,116)	(4,114)	(4,112)	(4,123)	(4,123)
Block 2									
Appraisals									
Attnact	-.15	.21	-.07	.18	.07	.09	.01	.10	.08
Valence	-.21*	-.32**	-.03	-.36**	-.01	.09	-.23	-.10	.09
Relevance	-.001	-.13	.11	.02	.14	.15	-.16	-.18	-.14
Power	.18*	.35**	.11	.42 □	-.01	-.05	.24*	-.05	-.02
Legit	.19	.06	.12	.08	.13	.06	.05	-.13	-.14
Hostility	-.11	.32*	-.18	.30**	-.11	.02	-.10	.17	-.12
Intention	-.05	-.17	-.18**	-.21	-.04	.08	.20	.15	.10
Hurtful	.13	.29*	.07	.15	-.09	-.09	-.12	.12	-.11
Explicit	.20**	.15	.13	.18	-.03	-.21**	.02	-.01	-.07
Dominant	.14	.03	.12	.11	.11	.06	.06	.11	-.05
Predict	.17*	.14	.12	.12	-.05	.08	.13	-.07	.04
Threat	.15	-.40**	.12	-.41**	.07	.01	.16	-.25	.17
Mentalrep									
Fam	.01	.01	.01	.01	.01	.01	.01	.01	.01
unfam	-.01	.09	-.05	.03	-.06	-.04	.10	.07	-.08
Discrep	-.06	-.15	.04	-.13	-.04	-.08	.17	.04	.15
R^2	.25**	.27 □	.13*	.24 □	.07	.15**	.17	.11	.07
F	3.81**	2.84 □	1.8 *	2.8 □	1.37	2.37**	1.54	.91	.63
(df)	(14,121)	(14, 118)	(14,123)	(14,119)	(14,116)	(14,114)	(14,112)	(14,123)	(14,123)
TOTAL									
R^2	.53**	.33 □	.48*	.37 □	.65 □	.58**	.13	.12	.14
TOTAL									
F	6.36**	2.71 □	5.27*	3.34	10.07 □	7.30**	1.90	.80	.94
(df)	(18,121)	(18, 118)	(18,123)	(18,121)	(18,116)	(18,114)	(18,112)	(18,123)	(18,123)

* $p < .05$; ** $p < .01$; □ $p < .001$.

Note. Cell entries are standardized *Betas*.

Table C16

Appraisal Correlation Table

Correlation Table

	Appraisals											
Appraisals	Attention	Valence	Relevant	Power	Legit	Predict	Hostile	Intention	Hurtful	Explicit	Dominant	Threat
Attention												
Valence	.26(190)**											
Relevant	.54(190)**	.17(194)*										
Power	.18(184)*	.50(188)**	.19(189)**									
Legit	.33(186)**	.42(190)**	.10(190)	.33(185)**								
Predict	.25(189)**	.29(193)*	.30(194)**	.16(189)*	.34(190)**							
Hostile	.16(188)*	.35(192)**	.05(193)	.23(188)**	.39(189)**	.25(193)**						
Intention	.22(189)**	.39(193)**	.10(194)	.40(189)**	.53(190)**	.22(194)**	.46(193)**					
Hurtful	.31(189)**	.36(193)**	.36(194)**	.50(189)**	.33(190)**	.27(194)**	.26(193)**	.45(194)**				
Explicit	-.14(187)	.21(191)**	-.17(192)*	.17(187)*	.21(187)**	.11(191)**	.39(190)**	.39(191)**	.22(191)**			
Dominant	.38(188)**	.28(192)**	.36(192)**	.23(186)**	.26(188)**	.38(191)**	.31(190)**	.34(191)**	.42(191)**	.17(189)*		
Threat	.52(190)**	.39(194)**	.34(195)**	.41(189)**	.43(190)**	.43(194)**	.48(193)**	.46(194)**	.51(194)**	.19(192)**	.54(192)**	

* $p < .05$; ** $p < .01$; □ $p < .001$.
Note. Cell entries are Pearson correlations and degrees of freedom (r(df)).

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ABSTRACT

AN EXAMINATION OF THE PRIMARY AND SECONDARY EFFECTS OF CYBER-BULLYING: DEVELOPMENT AND TESTING OF A CYBER-BULLYING MODERATOR/MEDIATOR MODEL

by

CRYSTAL LIN JOHNSON

May 2011

Advisor: Dr. Terry Kinney

Major: Communication Studies

Degree: Doctor of Philosophy

This study examined cyber-bullying as a social transgression and the potentially negative effects it has on individuals, specifically adolescents and young adults from experiences recalled by college students. Findings established support for a moderator/mediator model, designed and tested for this study, which describes the psychological process prompted by a cyber-bullying message, which is moderated as well as mediated by several factors. This study examined the theoretical and practical value of the model in terms of being able to reflect the psychological process that individuals move through when exposed to a cyber-bullying message, and its ability to account for both primary and secondary effects of bullying. To accomplish these goals, a packet of standardized measurement tools were used and data were quantitatively analyzed. Findings support that adolescents and young adults who find themselves to be a target of a cyber-bullying message find that message to be negative and experience negative effects. Findings from this study add support to current cyber-bullying research and remind readers of the critically important nature of cyber-bullying in our society today.

AUTOBIOGRAPHICAL STATEMENT

Crystal Lin Johnson chose a path of getting married and raising four children after graduating high school in 1984 instead of attending college. When the youngest of her children started Kindergarten, she found herself facing a divorce. She began teaching piano and violin part time and enrolled at Eastern Michigan University in January of 2003. Her music business grew as well as her course load. Knowing she needed to complete her degree as soon as possible in order to help her family, she chose to take more than a full course load each term. She graduated Magna Cum Laude with a grade point average of 3.89 in April of 2005 with a degree in Communication and her children proudly attended the commencement. Immediately after graduation, she was awarded a position as a Graduate Teaching Assistant which allowed her to attend Eastern Michigan University for her Master's degree in Communication and she graduated with a 4.0 grade point average in April of 2006. Having realized her desire to teach in the field of Communication at the college level, she applied for and received a Graduate Teaching Assistant Scholarship at Wayne State University for her Doctorate in Communication and began coursework in September of 2007. Crystal continued to teach music as well as teach at Eastern Michigan University, Wayne State University, and University of Phoenix. Upon completion of her coursework at Wayne State University, Crystal chose to pursue another Master's degree in Professional Counseling at Liberty University, while she worked on completing her dissertation at Wayne State. She graduated from Liberty University in November of 2009 and became licensed to practice in the state of Michigan as a licensed counselor in May of 2009. Crystal is looking forward to completing her PhD in Communication and beginning work in a full-time position teaching communication courses at the college level and getting her children ready for their turn at college.