Individual, cultural and behavioral correlates of cyberbullying behaviors in college students

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Social Psychology

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December 2016
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Individual, Cultural And Behavioral Correlates Of Cyberbullying In College Students

be accepted in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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December, 2016
Abstract

The growth of the research body surrounding the aggressive use of personal technologies, including but not limited to smartphones and personal tablets, has raised both definitional and measurement issues. The debate surrounding the distinguishing characteristics includes both the general definitions of the global terms (e.g., cyberbullying) as well as what the terms used in the definition mean (e.g., repetition). These characteristics are typically included in definitions of cyberbullying behavior, but are not always measured in studies examining the phenomenon. In Study 1, 397 participants from a Western university completed a survey for partial course credit. In this study, the relationship between the distinguishing characteristics and engagement in cyberbullying behaviors was examined, finding that individuals who reported engaging in cyberbullying behaviors reported doing so repeatedly, and engaged in several different types of cyberbullying behavior. These individuals also reported intending to cause a significant amount of distress, and believed that they were more powerful socially than their targets. Second, despite the ongoing debate regarding the definition of cyberbullying, the need to develop profiles of individuals who engage in cyberbullying behaviors is great as the consequences of such behaviors for the victims can be severe. Some of the factors included in previous profiles replicated, with sub-clinical psychopathy and positive victim status significantly predicting engagement. Acceptance of attitudes supportive of cyberbullying as well as acceptance of culture of honor norms were also predictive of engagement. Study 1 also examined behavioral responses to a specific cyberbullying behavior, ostracism. In Study 2, 239 participants from a Western university who did not complete Study 1 completed a behavioral study examining exclusion from an online
group. Although nonsignificant, the results of Study 2 suggest that individuals who have previously engaged in cyberbullying behaviors may be more likely to engage in these behaviors in response to being a target of the behaviors. The need for better measures of cyberbullying, and the need for both prevention and programs that reduce the negative consequences associated with cyberbullying in college populations is discussed.
Dedication

To my dad, Clyde Eugene Gibb, and my Grandparents, Harry and Beulah Burbank thank you for your support while you were here. I know you are all proud of this accomplishment.

To my mom, Carol Anne Gibb, whose wooden spoon kept me focused and moving forward throughout the entire process

To my brother, Zackaria C. Gibb, who always knew I could do it

To Brian Lee, who always seemed to know when I needed a distraction and was more than happy to provide it

To the numerous others whose support, guidance, and distraction was instrumental to helping me complete this project
Acknowledgements

I would like to thank Paul Deveruex, who supported me in both this project and numerous others like it. His support and guidance has been instrumental in providing a base for this project. I would also like to thank Colleen Murray, Markus Kemmelmeier, William Evans, and Anthony Papa for serving on the committee. Each member contributed enormous amounts of time and feedback across many different drafts of this document, and has helped to bring questions to the forefront that may have otherwise been overlooked.

I would also like to thank the generous support of the Society for the Social Psychological Study of Social Issues Grant-In-Aid program, who found it worthwhile to help fund Study 2. The financial support was extremely helpful in completing the project.

I would also like to thank Peter Reed, the Director of the Sanford Center for Aging, for providing both funding for my studies and for guidance during the process. I have gained invaluable experience while working at the Sanford Center. In addition, I would like to thank Greta Engelbrecht, whose genuine curiosity about the project helped keep me interested and moving forward.
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Hypothesis 2: Individuals who report high levels of support for COH norms will be more likely to engage in a wider range of cyberbullying behaviors compared to individuals who report low levels of support for COH norms.

Research Question 3: What relationship, if any, exists between gender and the range of cyberbullying behaviors engaged in?

MEASUREMENT OF RELATIONSHIP BETWEEN GENDER AND RANGE OF BEHAVIORS

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Research Question 1: How much risk is associated with engagement in cyberbullying behaviors?

Research Question 2: What factors are associated with engagement in cyberbullying behaviors?

Hypothesis 1: Individuals who endorse COH norms will be more likely to engage in cyberbullying behaviors than individuals who report low levels of COH.

Hypotheses 1a & 1b: Men / women who endorse COH norms will be more likely to engage in cyberbullying behaviors than men / women who do not endorse COH norms.

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Research Question 3: What relationship, if any, exists between gender and the range of cyberbullying behaviors engaged in?

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Moderation of COH Acceptance

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Chapter I

Individual, cultural and behavioral correlates of cyberbullying behaviors in college students

Technology use among the general population continues to increase, especially among individuals aged 18 - 19. Approximately 66% of young adults (individuals aged 18 – 29) reported using some form of technology on a daily basis in 2012 (Rainie, 2012) and this number increased to 83% in 2014 (Pew, 2014). Smart phone ownership is highest among this demographic, with 86% reporting owning a smartphone (M. Anderson, 2015). As society becomes more technologically integrated, the potential to utilize personal forms of technology in an aggressive manner also increases. Individuals who report their lives as being highly integrated with technology also report experiencing and engaging in cyberbullying behaviors at higher rates than individuals who lives are not as technologically integrated (Katzer, Fetchenhauer, & Belschak, 2009; P. K. Smith et al., 2008). Recent polls examining cyber-victimization have found that individuals aged 18 – 29 are most at risk, with 65% reporting that they have experienced some form of online harassment. For individuals aged 18 – 24, this number increases to 70% (Duggan, 2014). These poll results run counter to previous studies that have suggested cyberbullying decreases after high-school (Raskauskas & Stoltz, 2007; Slonje & Smith, 2008) or that these behaviors are not a significant problem (Olweus, 2012).

The most severe consequences of cyberbullying have been highlighted when 12 year-old Megan Meier killed herself due to receiving threatening and insulting messages via MySpace (ABCNews, 2007), and again when 18 year-old Tyler Clementi jumped to his death after his roommate used a webcam to broadcast an intimate encounter Clementi
had with another man over the Internet ("Tyler clementi," 2012). Within adolescent populations, cyberbullying has been linked to increased feelings of being threatened, feelings of distress (Juvonen & Gross, 2008; Kowalski & Limber, 2013; Mitchell, Ybarra, & Finkelhor, 2007; Ortega, Elipe, Mora-Merchan, Calmaestra, & Vega, 2009; Raskauskas & Stoltz, 2007; Ybarra, Mitchell, Wolak, & Finkelhor, 2006), increased suicide ideation (Bauman, Toomey, & Walker, 2013; Hinduja & Patchin, 2010; van Geel, Vedder, & Tanilon, 2014) and increased substance abuse (Mitchell et al., 2007). These consequences are more pronounced for individuals who both engage in and are victims of cyberbullying behaviors (Ybarra & Mitchell, 2004a).

College students who are the targets of cyberbullying behaviors report experiencing similar consequences as victims of traditional bullying (Bauman, 2013; Ybarra & Mitchell, 2004a; Ybarra et al., 2006) and adolescents. These include increased rates of anxiety, depression, and higher rates of illegal behavior such as illicit drug use (Kraft & Wang, 2010; Na, Dancy, & Park, 2015; Schenk & Fremouw, 2012; Schenk, Fremouw, & Keelan, 2013). College students who are the targets of cyberbullying behaviors also report a decreased ability to concentrate in their classes, increased feelings of frustration and anger (Kraft & Wang, 2010; Schenk & Fremouw, 2012; Schenk et al., 2013; Young-Jones, Fursa, Byrket, & Sly, 2014) and increased feelings of social isolation (Crosslin & Crosslin, 2014). Although similar in type to the consequences experienced by adolescents, there is research to suggest that the consequences experienced by college students may be magnified due to an experienced lack of social support (Cowie et al., 2013; Tennant, Demaray, Coyle, & Malecki, 2015). These results are not conclusive,
however, as other research suggests that these consequences may be attenuated in college (Giménez Gualdo, Hunter, Durkin, Arnaiz, & Maquilón, 2014).

Despite drawing from a rich tradition, research on cyberbullying remains relatively new and disorganized. Cyberbullying is defined as the use of personal technology to commit repeated behaviors intended to cause harm against a target that cannot easily defend him/herself against the attack due to a power imbalance (Sabella, Patchin, & Hinduja, 2013; P. K. Smith, del Barrio, & Tokunaga, 2013; Tokunaga, 2010). This definition draws heavily from the definitions of traditional bullying advanced by Olweus (1993, 1994, 1999). Whereas the widely used definition of cyberbullying advanced by P. K. Smith et al. (2013) and others includes specific distinguishing characteristics similar to those included in definitions of traditional aggressive and bullying behaviors, other definitions do not. Some definitions of cyberbullying do not include all of the distinguishing characteristics, leaving out power imbalance (Nocentini et al., 2010; Slonje, Smith, & Frisén, 2013) or repetition (Baldasare, Bauman, Goldman, & Robie, 2012; Menesini, 2012; Spears, Slee, Owens, & Johnson, 2009; Whittaker & Kowalski, 2014). Other definitions conceptualize the distinguishing characteristics differently, characterizing power imbalance as a perception (Pieschl, Porsch, Kahl, & Klockenbusch, 2013) or as the anonymity of the perpetrator (P. K. Smith, 2012a). All proposed definitions of cyberbullying suggest that the behavior is aggressive in nature.

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1Traditional bullying is defined by Olweus (1993, 1994, 1999) as repeated behaviors by an individual or group of individuals that are intended to cause harm to someone who is unable to defend her/himself due to the existence of a power imbalance favoring the perpetrator.
As mentioned above, rates of cyberbullying in college populations are also currently under debate. Some studies report low levels of the behavior, with rates ranging between 8 and 9% of respondents (MacDonald & Roberts-Pittman, 2010; Slonje & Smith, 2008). These studies have typically used single item measures of cyberbullying, asking respondents to self-classify as a cyberbully after reading a definition of the term, a method advocated by Olweus (2012). This is problematic in that individuals typically associate ‘bullying’ as well as ‘cyberbullying’ as a negative behavior (Kert, Codding, Shick Tryon, & Shyko, 2010) and adolescent by college students (Baldasare et al., 2012), possibly leading to underreporting of the behavior (Baldasare et al., 2012; Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Ybarra, Boyd, Korchmaros, & Oppenheim, 2012). Research using behavioral checklists has shown higher rates of cyberbullying in college populations, ranging from 52% (Gibb & Devereux, 2014) to a high of 84% (Doane, Kelley, Chiang, & Padilla, 2013) of samples reporting engaging in at least one of the behaviors measured. These studies do not measure the defining characteristics of cyberbullying, however, opening up the possibility that the behaviors being measured are not actually cyberbullying (Kowalski et al., 2014; Olweus, 2012; Tokunaga, 2010).
Chapter II: Aggression

The definitions of cyberbullying and cyberaggression draw heavily from definitions of traditional aggressive and bullying behaviors, respectively. Aggression is typically defined as any behavior that 1) is engaged in by an actor with the intention of causing harm to a target, 2) believed by the actor to be able to cause harm to the target, and 3) not desired by the target (C. A. Anderson & Bushman, 2001, 2002; Bushman & Anderson, 2001; Bushman & Huesmann, 2010). Behaviors that fail to meet a single condition are typically not characterized as aggressive. For example, a surgeon performing emergency surgery without the aid of anesthetic does not meet the first or third conditions, despite the surgeon’s knowledge that the behavior will most likely cause harm to the target. An example of aggressive behavior is a bar fight, in which the intent of both actors is to engage in behaviors they believe will cause harm to the other while avoiding the opposing actor’s own behavioral advances. A second example is traditional bullying behavior, in which the intent of the bully is to engage in a behavior they believe will cause harm to a target and increase their social status (Merten, 2005; Sijtsma, Veenstra, Lindenberg, & Salmivalli, 2009) or enforce conformity to a group norm or social identity (Burns, Maycock, Cross, & Brown, 2008).

There is some evidence to suggest that aggressive behaviors are innate, with physically aggressive behaviors emerging as early as 1 year of age (Caplan, Vespo, Pederson, & Hay, 1991; Cote, Vaillancourt, LeBlanc, Nagin, & Tremblay, 2006). Although these behaviors are viewed as ineffectual at causing real harm (Bushman & Huesmann, 2010), the early emergence of aggressive tendencies supports the idea of trait aggression, or an increased propensity to engage in both physical and verbal forms of
aggression (Buss & Perry, 1992). This form of aggression is typically contrasted with situational aggression, or aggressive behaviors that are engaged in due to some situational stimuli (Buss & Perry, 1992). Trait measures of aggression have been shown to be a strong predictor of engagement in aggressive behaviors in both unprovoked and provoked situations (Bettencourt, Talley, Benjamin, & Valentine, 2006; Bushman, 1995; Scheier, Buss, & Buss, 1978). In a meta-analysis, Bettencourt et al. (2006) reported that scores on measures of trait aggression were strongly associated with actual engagement in aggressive behaviors independent of situational constraints (but see Bailey & Taylor, 1991 for evidence of no link between trait aggression and behavioral measures of aggression).

Aggressive behavior is typically categorized along two dimensions, 1) the form of aggressive behavior, and 2) the reason for the aggressive behavior. The types of aggressive behavior are categorized broadly into either direct or indirect/covert forms (Card, Stucky, Sawalani, & Little, 2008; Little, Brauner, Jones, Nock, & Hawley, 2003; Little, Jones, Henrich, & Hawley, 2003). The broad forms of aggression have been further broken down into at least three different forms; physical, verbal, and indirect/relational/social aggression (Archer & Coyne, 2005; Björkqvist, Osterman, & Lagerspetz, 1994; Coyne, Stockdale, & Nelson, 2012; Gentile, Coyne, & Walsh, 2011; Underwood, Galen, & Paquette, 2001). Other sub-forms of aggression have also been suggested despite calls to unify similar constructs under one name (Archer & Coyne, 2005; Björkqvist, 2001; Underwood et al., 2001).

Broadly speaking, observed gender differences in rates of aggression might be the result of a narrow focus by researchers. Studies that have focused exclusively on direct
forms of aggression typically report significant gender differences, with men engaging in more aggressive behaviors than women (Card et al., 2008; Crick, 1997; Hyde, 1984; Schober, Björkqvist, & Somppi, 2009). However, these gender differences disappear (Björkqvist, Lagerspetz, & Kaukialnen, 1992; Björkqvist et al., 1994) or are significantly reduced in magnitude (Archer, 2004; Card et al., 2008) when indirect forms of aggression are also included. The observed differences between direct and indirect forms of aggression are possibly the result of cultural norms regarding aggressive behaviors (Crick, 1997; Crick & Dodge, 1994) or developmental differences between the genders (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, & Kaukialnen, 1992).

Aggressive behavior is also categorized on the reason for the behavior (Crick & Dodge, 1996; Dodge & Coie, 1987; Dodge, Harnish, Lochman, Bates, & Pettit, 1997; Price & Dodge, 1989). Reactive aggression is a defensive action, typically accompanied by some form of visible anger in response to some perceived violation. Proactive aggression is defined as aggressive behavior that is unprovoked and serves to advance some specific goal (Card & Little, 2006; Dodge & Coie, 1987; Poulin & Boivia, 2000). Proactive aggressive behavior can be further split dependent upon the goal of the actor. If the actor is seeking to restore or claim a physical object/location, then it is deemed instrumental aggression. If, however, the actor is seeking to establish dominance or intimidate a peer in some manner, the behavior is deemed bullying (Price & Dodge, 1989). Both proactive and reactive forms of aggression are negatively associated with social acceptance (Card & Little, 2006; Coie, Dodge, Terry, & Wright, 1991), however, proactive forms of aggression are associated with fewer indices of maladjustment (Card et al., 2008).
These broad categorizations have allowed for the development of a multitude of theories regarding aggressive behaviors. Two specific theories, the social information processing model of aggression (SIP; Crick & Dodge, 1994) and the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992) are both based on the assumption that aggression is a stable trait (Buss & Perry, 1992) and that the type of aggression engaged in is modifiable by the environment.

Categorization of Aggressive Behavior

Types of aggression. Broadly speaking, aggressive behaviors can be categorized into two types. Overt/direct aggressive behaviors engage the target directly and include both physical and verbally aggressive behaviors. Common examples of direct aggression include physically striking another person or yelling at another person in an aggressive manner or threatening physical harm. These behaviors are typically contrasted with covert/indirect aggressive behaviors that do not directly engage the target, but instead focus on damaging the individual’s social relationships (Little, Brauner, et al., 2003; Little, Jones, et al., 2003). Examples of covert aggression include spreading rumors, excluding someone from a group, or threatening to dissolve a friendship if certain the target does not meet conditions.

Studies that have focused on direct forms of aggression have reported that men engage in significantly higher rates of aggressive behavior (Card et al., 2008; Crick, 1997; Hyde, 1984) and endorse normative beliefs accepting of direct aggression at higher rates than women (Björkqvist, Ekman, & Lagerspetz, 1982). Men’s reported acceptance of physical acts of aggression typically decrease with age (Archer & Coyne, 2005; Basow, Cahill, Phelan, Longshore, & McGillicuddy-DeLisi, 2007; Loudin, Loukas, &
Robinson, 2003) and is dependent upon the environment (Archer, 2004). Mirroring this decline in reported acceptability of physical aggressive behaviors, actual acts of physical aggression also typically decline with age (Chapell et al., 2004; Chapell et al., 2006; Wang, Iannotti, & Nansel, 2009). This decline may be limited to men who have attended college, however (Archer, Graham-Kevan, & Davies, 2005). Despite the overall decline in rates of aggressive behaviors, overall rates of direct and/or physical aggression remain higher in men than in women (Archer, 2004; Basow et al., 2007; Schober et al., 2009; Storch, Bagner, Geffken, & Baumeister, 2004) even though the magnitude of the difference is significantly reduced in college samples.

When indirect forms of aggression are included in the same study, observed gender differences in rates of aggressive behavior tend to disappear. For example, young girls report engaging in higher rates of relational aggression compared to same age boys (Crick, 1995; Crick & Dodge, 1996; Crick & Grotpeter, 1995; Delveux & Daniels, 2000). Rates of indirect aggression show a marked increase in both girls and boys during adolescence (Rose, Swenson, & Waller, 2004; Vaillancourt, Miller, Fagbemi, Cote, & Tremblay, 2007) and remain elevated in late adolescence compared to rates of direct aggression, including physical (Archer, 2004). These rates are typically maintained by both genders into adulthood (Björkqvist et al., 1994; Kawabata, Tseng, & Crick, 2014; Schober et al., 2009), especially in environments that do not condone physical acts of aggression, such as the workplace (Archer, 2004). Supporting the trait view of aggression, this increase in relational and other forms of indirect aggression corresponds to reported decreases in physically aggressive behaviors (Chapell et al., 2004; Chapell et al., 2006; Wang et al., 2009).
One well-researched example of indirect/relational aggression is ostracism, or the purposeful ignoring and exclusion of an individual or group of individuals (K. D. Williams, 1997, 2007a, 2007b). As social animals, it is theorized that humans have a fundamental need to connect with others (Baumeister & Leary, 1995). This need to connect allows individuals to form positive self-concepts (Leary, Tambor, Terdal, & Downs, 1995), and a sense of control over their environment (Bandura, 1982; Taylor & Brown, 1988). Ostracism has been found to reliably threaten these needs, as well as reducing self-reported levels of self-esteem (Gerber & Wheeler, 2009; A. Smith & Williams, 2004; van Beest & Williams, 2006; K. D. Williams, Cheung, & Choi, 2000; K. D. Williams et al., 2002). These effects have been shown to last up to an hour, especially for those individuals who are socially anxious (Zadro, Boland, & Richardson, 2006).

The effects of ostracism extend across a variety of situations and personal characteristics. In one study, individuals who witnessed others engage in a social activity without the ability to engage in the activity themselves reported feelings of social exclusion (Wesselmann, Bagg, & Williams, 2009). These effects held even when the participant knew the exclusion was artificial and they were watching a computerized simulation (Zadro, Williams, & Richardson, 2004). Individuals who were excluded in an online chat room (K. D. Williams, Cheung, et al., 2000; K. D. Williams et al., 2002) or who engaged in a virtual ball toss game online reported feeling rejected at similar levels (K. D. Williams, Cheung, et al., 2000).

Other group membership manipulations showed similar results, with participants reporting negative impacts due to being excluded by nominal out-group members (K. D. Williams, 2007a; K. D. Williams, Cheung, et al., 2000; K. D. Williams et al., 2002).
Studies on the experience of distress between genders (K. D. Williams & Sommer, 1997), ethnicities or group desirability (Gonsalkorale & Williams, 2007; K. D. Williams, 2007a), group membership status (K. D. Williams, Cheung, et al., 2000; K. D. Williams et al., 2002), self-reported levels of individualism (A. Smith & Williams, 2004) or self-reported loneliness (Carter-Sowell, Chen, & Williams, 2008) all failed to find significant differences. The pervasive nature of the consequences of ostracism across these individual difference variables is supported by previous findings that ostracism is used both across different cultures (K. D. Williams, 1997) as well as within the animal kingdom (Gruter & Masters, 1986) as a way to punish group members and bring individual behavior back into line with group norms. Ostracism has been shown to elicit both pro-affiliative and anti-social behaviors in targets of the behavior.

One pro-affiliative behavior is nonconscious mimicry, a behavior that has been shown to increase feelings of attraction in others (Lakin & Chartrand, 2005; Lakin, Jefferis, Cheng, & Chartrand, 2003). In two separate studies, children who witnessed another child being ostracized but were not ostracized themselves were more likely to engage in nonconscious mimicry than children who had not witnessed the ostracism (Lakin, Chartrand, & Arkin, 2008; Over & Carpenter, 2009). It is likely that these behaviors were an attempt to increase perceived affiliation between the individual and the group, protecting the individual from being ostracized themselves. Similarly, some individuals who were ostracized were found to be more likely to include individuals who had ostracized them (Dorn, Hook, Davis, Van Tongeren, & Worthington, 2013). Maner, DeWall, Baumeister, and Schaller (2007) reported that individuals who had been rejected responded by seeking social contact from others. Other pro-affiliative behaviors in
response to ostracism include increased compliance to in-group norms (Ouwerkerk, Kerr, Galluci, & van Lange, 2005; K. D. Williams, Cheung, et al., 2000), increased sensitivity to social cues (Pickett & Gardner, 2005; Pickett, Gardner, & Knowles, 2004), increased social susceptibility (Carter- Sowell et al., 2008) and increased conformity to authority figures (Riva, Williams, Torstrick, & Montali, 2014).

Conversely, some individuals who have been ostracized engage in decidedly non-social behaviors, such as aggression. Ostracism has been shown to increase aggressive behaviors against similar others, naïve participants, and those who may have ostracized the individual (Buckely, Winkel, & Leary, 2004; Twenge, Baumeister, Tice, & Stucke, 2001; Warburton, Williams, & Cairns, 2006b). In one study, individuals who had been ostracized allocated more hot sauce to a peer who was reported to not like spicy foods (Yeager, Trzesniewski, & Dweck, 2013). Other behavioral measures of aggression have also been utilized, with participants who had been ostracized more likely to increase the volume of a noise blast sent to a participant who had ostracized them (Warburton et al., 2006b). Ostracized individuals were also less likely to rate the ostracizer’s work more negatively, and allocated less money to the individual (Maner et al., 2007). Individuals who have been ostracized were also shown to be less likely to engage in pro-social behaviors such as donating money to a charity or engage in additional laboratory experiments (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007). Aggressive behaviors in response to ostracism have also been studied in the cyberrealm.

In online studies, Dorn et al. (2013) and Nozaki and Koyasu (2013) both reported that some individuals who had been ostracized were less likely to throw the ball to the group member who had excluded them. Nozaki and Koyasu (2013) noted that this effect
was moderated by the participants self-reported level of emotional control, with participants who reported low levels of emotional control more likely to engage in ostracism behaviors. A similar study was conducted by Wölfer and Scheithauer (2013). In this study, participants had several different behavioral options, including 1) throwing the ball against a ‘wall’, 2) including the offending partners by throwing the ball to them, or 3) ‘aggressively’ throwing the ball to the other participants. The researchers reported that participants with low anger control skills and information processing biases were more likely to utilize one of the more aggressive options such as choosing to throw the ball against a ‘wall’ or ‘aggressively’ throwing the ball to the offending player (Wölfer & Scheithauer, 2013). These behavioral results are bolstered by other studies that have examined the consequences of ostracism for the *ostracizer*. Individuals who engaged in ostracism reported increases in their perceptions of control (Sommer, Williams, Ciarocco, & Baumeister, 2010; K. D. Williams, Bernieri, Faulkner, Gada-Jain, & Grahe, 2000; K. D. Williams, Wheeler, & Harvey, 2001).

Ostracism has been found to reliably elicits negative consequences for targets across a majority of individual difference variables, including gender, ethnicity, and political ideology. However, there is some support for the idea that some specific individual difference factors may alter both the magnitude and duration of consequences. Social anxiety has been shown to moderate the consequences of ostracism, with individuals who report high levels of social anxiety experiencing a significantly longer threat response (Zadro et al., 2006). Age also moderates the consequences of ostracism, with older adults (51+) reporting a significantly muted response to ostracism compared to
younger adults (18 – 25) and middle-aged adults (26 - 50; Hawkley, Williams, & Cacioppo, 2011).

It is likely that the shared experience of actively excluding another reinforces group identity. Ostracism has been found to increase feelings of belongingness for those who engage in ostracism behaviors within a group setting (K. D. Williams et al., 2001). These findings are contrary to evidence indicating that individuals who engage in exclusion behaviors independent of a group experience threats to their need to belong, likely due to the risk of being excluded themselves. Similar to increased feelings of belonging, self-esteem has also been shown to increase in individuals who engage in ostracism with others (K. D. Williams et al., 2001).

**Reasons for Aggression.** Aggressive behavior is also classified by the reason for the aggressive behavior. Some individuals engage in aggressive behaviors with the intent to achieve a goal, such as interpersonal control or behavioral modification. These behaviors lack an emotional component and are typically classified as proactive or instrumental aggression (Archer & Coyne, 2005; Basow et al., 2007; Card & Little, 2006; Dodge & Coie, 1987). Many cultures engage in ostracism when an individual engages in behaviors outside of accepted norms (K. D. Williams, 1997) and this behavior is also replicated in groups of girls (Björkqvist et al., 1982; Carli, 2001; Rose et al., 2004). The use of ostracism to encourage adherence to group norms is also supported by the prosocial consequences of the behavior (Ouwerkerk et al., 2005; Riva et al., 2014; K. D. Williams, Cheung, et al., 2000). Individuals also engage in aggressive behavior as a reaction to some environmental stimuli (Card & Little, 2006; Dodge & Coie, 1987). Compared to proactive aggression, individuals who engage in reactive aggression do so
with intense emotion and to retaliate for a perceived slight, such as a person striking someone who bumped into them or if the individual feels ostracized by their peer group.

Individuals who engage in either proactive or reactive aggressive behaviors are at increased risk of peer rejection and delinquency (Card & Little, 2006; Dodge & Coie, 1987; Poulin & Boivia, 2000). However, unlike reactive aggression, school-aged children who engage in proactive aggression are typically viewed as more popular (Card & Little, 2006; Cillessen & Mayeux, 2004; Rodkin, Farmer, Pearl, & Van Acker, 2000; Rose et al., 2004). This is especially true for rates perceived popularity (Parkhurst & Hopmeyer, 1998). Besides being at risk for peer rejection, individuals who engage in reactive aggression are also at risk for increased victimization from their peers (Card & Little, 2006; Dodge & Coie, 1987; Poulin & Boivia, 2000).

Individuals who engage in traditional bullying behaviors as well as those who both engage in and are victims of the behaviors (bully/victims) have been shown to exhibit higher rates of both proactive and reactive aggression (Salmivalli & Nieminen, 2002). Of these two groups, bully/victims are typically rated as the most aggressive (Salmivalli & Nieminen, 2002). Bullies may be drawn to individuals who characteristically respond with reactive aggression due the increased peer rejection experienced by these individuals (Sijtsema et al., 2009) or the low levels of displayed impulse control (Coie et al., 1991; Salmivalli, Karhunen, & Lagerspetz, 1996).

Reactive aggression has also been linked to engagement in cyberbullying behaviors. Children who report engaging in cyberbullying report they were responding to a perceived slight by the target (Felmlee & Farls, 2013; König, Gollwitzer, & Steffgen, 2010; Law, Shapka, Hymel, Olson, & Waterhouse, 2012). Examples of perceived slights
include not responding to a text message or feeling singled out by the target by an online posting or in real life. This is consistent with research suggesting that individuals who engage in cyberbullying behaviors do so due to a perceived threat to their need to affiliate (A. Smith & Williams, 2004). Independent of how aggressive behavior is categorized much of the research has focused on etiology. Several theories of aggression are believed to be relevant to cyberbullying behavior.

Theories of Aggressive Behavior

Similar to both forms and reasons for aggression, there are multiple theories that seek to describe aggressive behaviors (see C. A. Anderson & Bushman, 2002; and Bushman & Huesmann, 2010 for a more comprehensive review of the literature surrounding aggressive behavior). Two theories that may be relevant to aggression within the cyberrealm are the social information processing model of aggression (SIP; Crick & Dodge, 1994) and the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992). These theories follow the trait theory of aggression advanced by Buss and Perry (1992), and suggest that changes in types of aggressive behavior are the result of changes in normative beliefs regarding aggressive behavior. The SIP model (Crick & Dodge, 1994) suggests that these changes are largely due to environmental forces, with highly restrictive environments reducing rates of aggressive behavior. The developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992) proposes that changes in type of aggressive behavior are due to the development of novel abilities that carry reduced risk. For example, the development of complex language skills may drive a movement from risky physical forms of aggression to less risky verbal forms of aggression.
The Social Information Processing Model of Aggression. The SIP model of aggression (Crick & Dodge, 1994) draws heavily from the social learning theory of aggression proposed by Bandura (1978) as well as earlier work by Dodge (1980) and Huesmann (1988). This model has focused on traditional forms of aggression and may be relevant to cyberbullying as it suggests individuals adopt normative beliefs that are accepting of aggressive behaviors. These beliefs then influence future behavior by altering the perception of environmental stimuli and possible behavioral choices (Crick & Dodge, 1994).

This model of aggression proposes that aggressive behavior is the product of distinct cognitive ‘steps’ operating within a recursive model. According to this theory, individuals encode information regarding their environment, such as the existence of facilitators or barriers to aggressive behaviors, as well as the individual’s current emotional state (Crick & Dodge, 1994). This information is used to develop goals within the environment. A possible example of this is a bully desiring a dominant position within their social network. A range of possible behaviors that are believed to be able to satisfy this goal are then identified and evaluated. Behaviors that are believed to be able to satisfy the goal and carry relatively low environmental risk are then enacted, and the environmental reaction is monitored. Behaviors that are perceived to achieve the goal and do not receive condemnation from the environment are reinforced. Behaviors that are rejected by the environment or do not meet the desired goal are discarded (Crick & Dodge, 1994).

Important to the SIP theory of aggression (Crick & Dodge, 1994) is the influence of normative beliefs on aggressive behaviors. Normative beliefs regarding aggressive
behavior develop as a consequence of exposure to aggressive forms of media such as television or video games (C. A. Anderson et al., 2010; Calvete & Orue, 2011; Gentile et al., 2011; Krahé, 2014; Krahé & Moller, 2004; Moller & Krahé, 2009), exposure to aggressive cultural models (Boxer et al., 2013; Calvete & Orue, 2011; Cohen & Nisbett, 1994; Cross, Uskul, Gercek-Swing, Alozkan, & Ataca, 2012; Henrich & Shahar, 2013; Nisbett, 1993; Schwartz, DeKeseredy, Tait, & Alvi, 2001) as well as familial or peer examples of aggression (Baldry, 2003; Kuppens, Grietens, Onghena, & Michiels, 2009a, 2009b). Studies examining the impact of aggressive forms of media have found an increase in childhood aggressive behaviors in both the short- (Gentile et al., 2011) and longer-term (Moller & Krahé, 2009). There is meta-analytic and longitudinal support for the idea that this impact continues into adulthood (C. A. Anderson & Bushman, 2001; Huesmann, Moise-Titus, Podolski, & Eron, 2003). This impact, however, is not without controversy, with researchers suggesting that the observed link is due to publication bias (Ferguson, 2007; Ferguson & Kilburn, 2009). Examples of aggression within an individual’s cultural and familial environment can also influence aggressive behaviors.

Boxer et al. (2013) reported that children between the ages of 7 and 10 who were exposed to cultural models of aggression were more likely to report engaging in aggressive behaviors later in life and more likely to endorse normative beliefs accepting of aggressive behavior. Other researchers found that exposure to both a history of politically motivated aggression and current rates of rocket attacks predicted current levels of anti-social behavior (Cummings et al., 2010; Henrich & Shahar, 2013).

Aggressive behavior can also be impacted by normative beliefs within specific subcultures. For example, men who participate in aggressive team sports report engaging
in more aggressive behaviors generally than men who participate in aggressive individual sports (Schwartz et al., 2001). Researchers have also noted differences in rates of aggression by geographic region (Cohen & Nisbett, 1994; Cross et al., 2012; Nisbett, 1993). Familial culture has also been linked to aggressive behaviors (Baldry, 2003; Bandura, 1978; Kuppens et al., 2009a, 2009b). Interestingly, exposure to aggressive models in the home can also alter the type of aggressive behavior engaged in (Kuppens et al., 2009a, 2009b).

Normative beliefs influence aggressive behaviors in several ways. First, these beliefs can alter the perception of otherwise neutral events in the initial environmental scan, a phenomenon known as hostile attribution of intent or hostile attribution bias (de Castro, Veerman, Koops, Bosch, & Monshouwer, 2002; Dodge, 1980; Dodge, Pettit, McClasky, Brown, & Gottman, 1986; VanOostrum & Horvath, 1997). Individuals who hold a hostile attribution of intent (de Castro et al., 2002) or hostile attribution bias (Dodge, 1980; Dodge et al., 1986) report believing that the environment or specific actors within the environment are actively trying to block the achievement of a goal. For example, an individual who holds a hostile attribution of intent would be more likely to believe that a stranger purposefully bumped into them on the street. This is different from someone who does not hold this attribution who may believe that the incident was an accident and thus not aggressive as it lacked intentionality.

Normative beliefs also influence the production of behavioral choices. Huesmann (1986, 1988) and others (Huesmann & Eron, 1984; Huesmann & Guerra, 1997) reported that individuals who held normative beliefs regarding aggressive behaviors generated fewer non-aggressive options when asked to develop a behavioral list. These individuals
were also more likely to select an aggressive behavior than individuals who did not hold such beliefs. Normative beliefs can also alter the type of aggressive behavior an individual engages in. Baldry (2003) and others (Kuppens et al., 2009a, 2009b) found that exposure to models of aggressive behavior in the home was related to the frequency of similar behaviors in other interactions. Specifically, children who were exposed to aggressive behaviors in their home engaged in more aggressive behaviors against their peers than children who were not exposed to such models. These behaviors typically mirrored the behavior the child encountered in the home independent of gender norms, with boys who were exposed to models of indirect aggression engaging in more indirect forms of aggression themselves (Baldry, 2003; Kuppens et al., 2009a, 2009b).

Finally, normative beliefs can influence the perception of the environmental response to the behavior. For individuals who accept normative beliefs regarding aggression, this may mean an increased likelihood of explaining away or ignoring negative consequences associated with the behavior. These beliefs can also alter the perceived efficacy of the behavior in achieving the goal, increasing the likelihood of the behavior being engaged in again (Crick & Dodge, 1994). However, it is possible that developmental differences influence aggressive behavior as well.

**Developmental Theory of Aggression.** One theoretical tradition that may explain observed gender differences in rates of aggressive behavior is the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992). This theory may also explain some of the differences between men who attend college and those who do not. The developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992) suggests that although the type of
aggressive behavior engaged in may change, the propensity to engage in aggressive behavior does not. Central to this theory is the idea that the appearance of new developmental abilities drives the development of novel aggressive behaviors. Shifts in developmental abilities alter the type of aggressive behavior engaged in by altering the risk/benefit ratio associated with aggressive behavior repertoire (Björkqvist, 1994), making aggressive behaviors that are relatively risk free and achieve the same goals more likely. This is similar to but extends the influence of environmental factors within the SIP model of aggression (Crick & Dodge, 1994). For example, as a child develops complex verbal skills they are also more likely to engage in verbal forms of aggression such as yelling at the target or calling the target a derogatory name while at the same time decreasing the use of riskier physically aggressive behaviors.

Evidence supporting the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992) can be found in the changing rates of different types of aggressive behaviors, in who engages in each type of aggression, as well as within the developmental literature showing the differential development of skills between the sexes (Connellan, Baron-Cohen, Wheelwright, Batki, & Ahluwalia, 2000; Lutchmaya, Baron-Cohen, & Raggat, 2002). Physically aggressive behaviors have been observed in infants as young as 4 months although these behaviors are limited to retaliatory behaviors and protests. The intentionality of these behaviors is also difficult to ascertain (Caplan et al., 1991). Rates of these early aggressive behaviors are highest in children under the age of 3 (Cote et al., 2006) but don’t disappear entirely (Archer, 2004; Blanton & Jaccard, 2008; Hyde, 1984), especially when the target and actor are of the same sex (Basow et al., 2007). As more complex developmental abilities
such as verbal or social abilities emerge, aggressive behaviors that utilize these skills also develop and increase in frequency. This shift in aggressive behavior is most pronounced for behaviors prohibited by normative beliefs such as physical aggression in girls (Archer, 2004; Björkqvist, Lagerspetz, et al., 1992).

An example of this shift can be seen in the difference between rates of relational and physical aggression in women. First, current data support the idea that social abilities, including the ability to accurately read social situations and the development of accurate representations of social limitations and motivations, develop earlier in women compared to men (Connellan et al., 2000; Lutchmaya et al., 2002). Next, normative beliefs about aggressive behavior are prohibitive of physical forms of aggression in women, with girls who engage in non-gender normative behaviors such as physical aggression or other stereotypically masculine behavior rated as less likable by their peers (Björkqvist et al., 1982; Lytton & Romney, 1991). Girls who engage in non-gender normative aggressive behaviors also experience limited social control within their peer networks (Carli, 2001; Rose et al., 2004). Second, girls typically form closed social networks with low levels of relational mobility making it hard for a new member to enter established groups (Eder & Halliman, 1978; Schug, Yuki, Horikawa, & Takemura, 2009). Within these closed social networks, the impact of ostracism is especially powerful, as the individual cannot easily join a different group. The early development of social skills coupled with the risks associated with engaging in more overt forms of aggression, including the risk of losing influence and being ostracized by their peer group, may encourage girls to shift the way that they aggress. Rates of indirect aggression support this idea, emerging first in young girls and showing a steady increase as they age (Cote, Vaillancourt, Barker, Nagin, &
Tremblay, 2007; Vaillancourt et al., 2007). This form of aggression remains more common in environments that are prohibitive against more direct forms such as workplaces and schools (Archer, 2004).

Similar to rates of indirect aggression in women, rates of physical aggression in men are influenced by several factors. Boys’ self-reports of physical aggression typically match both peer and teacher reports of such behaviors (Huesmann & Eron, 1986). Similar results were reported by Björkqvist et al. (1982), with boys who engaged in physical aggression reporting that they wanted to be more aggressive compared to same age girls, suggesting that young boys hold normative beliefs supportive of physical aggression.

Next, social networks developed by boys are fundamentally different than social networks developed by girls. Boys tend to develop open social networks, allowing individual members to move freely between groups (Eder & Halliman, 1978). These open social networks reduce the impact of social consequences related to physical aggression by allowing members to associate with multiple groups at the same time (Card & Little, 2006; Coie, Dodge, & Kupersmidt, 1990; Coie et al., 1991). If physical aggression is sanctioned in one group, a group believed to be supportive of the behavior can more easily be joined, reducing the impact of the group’s exclusion behavior.

Norms supportive of physical aggression are not stable in boys, however. As boys age, the reported acceptance of physical aggression typically decreases, with men who attend college reporting the lowest levels of acceptance (Archer, 2004; Archer et al., 2005). This decrease in reported support for physical acts of aggression is accompanied by a corresponding increase in more covert forms of aggression in men (Cote et al., 2007; Rose et al., 2004; Vaillancourt et al., 2007). There is, however, some support that
men who participate aggressive team sports or fraternal organizations either retain or develop elevated levels of support for diverse forms of physical aggression (DeKesseredy, Ellis, & Alvi, 2005; Schwartz et al., 2001).

Similar to the SIP model of aggression (Crick & Dodge, 1994) the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992) suggests that the rate of aggression is stable, with the type of aggression engaged changing. According to the developmental theory, differences in developmental ability as well as environmental norms determine the type of aggressive behavior an individual will engage in. Those behaviors that are within the developmental ability of the individual, carry the lowest risk of environmental sanctions, and achieve the desired goal are more likely to be selected (Archer, 2004; Björkqvist, 1994). Within the cyberrealm, the ability of the environment to positively influence behavior is significantly reduced, resulting in a lowering of behavioral inhibitions in the online environment or an online disinhibition effect (Joinson, 2007; Kiesler, Siegel, & McGuire, 1984; Suler, 2004).
Chapter III: Definitional Issues Regarding Cyberbullying

P. K. Smith et al. (2008) defined cyberbullying as an aggressive act or behavior that is carried out using electronic means by a group or an individual repeatedly and over time against a victim who cannot easily defend her/himself. Utilizing a combination of the most included characteristics, Tokunaga (2010) proposed that cyberbullying should be defined as ‘any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on other’ (p. 278). Updates to these definitions have been published in the intervening years, with the newest definition of cyberbullying suggesting that cyberbullying is a systematic abuse of power occurring through the use of information and communication technologies (Slonje et al., 2013; P. K. Smith et al., 2013). This definition is not universally supported, however.

Focus groups conducted with both college-aged (Baldasare et al., 2012) and adolescent participants (Nocentini et al., 2010) support the definition of cyberbullying proposed by Walker (2014). Walker defined cyberbullying as:

the use of web-based communication media or hand-held technologies by an individual or group to deliver slanderous, harassing, demeaning, obscene, racist or other offensive messages, images, or video either directly or indirectly that result in emotional harm to the target of the communication (p. 65).

This definition is closer to the definition of cyberaggression proposed by Bauman, Underwood, and Card (2013) or Grigg (2010) than the other definitions proposed by P. K. Smith et al. (2013) or others (Slonje et al., 2013; P. K. Smith et al., 2008; Tokunaga, 2010). The current study uses a similar definition to the most recent definition of
cyberbullying proposed by P. K. Smith et al. (2013) and Slonje et al. (2013). In the current study, cyberbullying is defined as a pattern of behaviors that utilize technology to cause distress to a target within a closed social network that perceives himself or herself as incapable of stopping or avoiding the behavior.

Coupled with the disagreement on the core definition of cyberbullying, there is also disagreement on how the distinguishing characteristics contained within the definition should be conceptualized. Although not included in the definition by Walker (2014) above, there is currently debate surrounding how power imbalance, repetition, and intentionality should be conceptualized within the definition of cyberbullying as well as whether or not other distinguishing characteristics should be included.

**Power Imbalance**

Initially power imbalance in bullying behavior was limited to differences in physical strength (Olweus, 1993, 1994). The identification and classification of relational aggression, or aggression that targets an individual’s social network (Crick, Ostrov, Appleyard, Jansen, & Casas, 2004; Little, Brauner, et al., 2003; Little, Jones, et al., 2003) increased the scope of possible domains that needed to be covered under this concept. Power imbalance now includes individual popularity and social strength differences (Caravita, Di Blasio, & Salmivalli, 2009; de Bruyn, Cillessen, & Wissink, 2009; Parkhurst & Hopmeyer, 1998) as well as differences in physical strength. In the physical realm, the existence of a power differential of any kind can help to ensure that the bully is safe from repercussions. Individuals that are physically weaker than a bully are not likely to engage in physical confrontation, and an individual whose social status is not above a bully’s are not likely to get support from his/her peers in any attempt to defend
themselves (Burns et al., 2008; Merten, 2005). How power imbalance is experienced within the cyberrealm is much less clear-cut. According to some researchers, advances in technology have created a level playing field, removing any social benefit gained by a traditional power imbalance. Other researchers contend that, similar to the real world, power imbalance is best conceptualized as a difference in social power, whereas others suggest that an expansion of the term is once again necessary.

Nocentini et al. (2010) proposed that, at least within the cyberrealm, the existence of a power imbalance is a moot point. According to these researchers, technology has created a more level playing field with technological advances decreasing the skill needed to attack another via the medium. Nocentini et al. (2010) also noted that it takes a relatively low level of technological savvy to compose a threatening text message or post embarrassing rumors about someone on a social networking site. These researchers also suggested that victims of cyberbullying behaviors could choose to ignore the attack or otherwise distance themselves from it by shutting off their phone or deleting a social networking profile (Nocentini et al., 2010).

Despite the best intentions of the target, these actions may actually cause more distress. Shutting off an electronic device or logging out or deleting a profile off of a social networking site does not stop the perpetrator from spreading malicious rumors about the target via electronic means. Instead, these actions may further isolate the individual from their social networks. In today’s technologically infused world where a significant proportion of individuals utilize some form of online social networking site (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015) and an increasing number of users
classify their smart-phone as something ‘they could not live without’, disconnecting is no longer a valid option.

There are two ways that power imbalance has been conceptualized within the cyberbullying literature. First, power imbalance has been conceptualized as a difference in the popularity of the perpetrator and victim. Second, power imbalance has been conceptualized as knowledge regarding the identity of the perpetrator. In one study, Pieschl et al. (2013) reported that perceived differences in popularity altered the amount of distress associated with being the target of cyberbullying. Individuals who reported being the victim of cyberbullying behaviors and believed that the perpetrator was more popular than them reported experiencing more distress than individuals who experienced cyberbullying at the hands of someone they perceived to be the same or less popular (Pieschl et al., 2013). These results suggest that, at least in some regards, cyberbullying is similar to relational aggression.

Power imbalance has also been conceptualized as knowing who perpetrated the behavior. In this conceptualization, an attacker gains power over their victim by hiding their identity, thereby reducing the ability of the target to stop the behavior as well as the ability to remove information used in the attack from online services (Dooley, Pyżalski, & Cross, 2009; Wright, 2014). Some researchers have found that while some victims of cyberbullying report knowing the identity of their attacker (P. K. Smith et al., 2008; Sourander et al., 2010) others who have been targeted are not confident in the identity of the individual who perpetrated the attack (Raskauskas, 2010; Slonje & Smith, 2008; P. K. Smith et al., 2008; Vandebosch & Van Cleemput, 2008). This ability of the perpetrator to remain anonymous may also increase feelings of isolation in targets (P. K. Smith, 2012b).
Anonymity can also increase the chances that an individual will engage in cyberbullying behaviors. Studies that have examined this lowering of behavioral inhibitions in an online environment, or the online disinhibition effect (Joinson, 2007; Kiesler et al., 1984) have provided evidence that individuals do not need to feel completely anonymous to engage in cyberbullying behaviors (Lapidot-Lefler & Barak, 2012). Instead, the degree that a person’s identifying personal details such as gender, weight, or age are unknown to others may increase the likelihood of engaging in aggressive behaviors online. Castellá, Abad, Alonso, and Silla (2000) as well as others (Cramton, Orvis, & Wilson, 2007; Tanis & Postmes, 2007) found that individuals who believed they were unidentifiable to their chat partners increased their display of dispositional traits in computer-mediated communication. Lapidot-Lefler and Barak (2012) theorized that a similar effect occurs when individuals engage in cyberbullying behaviors, with the perceived unidentifiability reducing situational constraints on their behavior.

Currently the literature does not provide enough support for removing the requirement of a power imbalance as advocated by Nocentini et al. (2010) or the proposed alternative conceptualizations of power imbalance by Dooley et al. (2009) and Wright (2014). There is some evidence to support the idea that the concept of power imbalance is similar within the cyberrealm and the real world (Pieschl et al., 2013), although there may still be differences between the two settings. For example, it is likely that individuals who engage in traditional bullying behaviors perceive themselves to be more powerful than their targets (e.g., Merten, 2005), whereas there is some evidence to support the idea that this is not the case for individuals who engage in cyberbullying.
behaviors. In their studies, both Gibb and Devereux (2014) and Goodboy and Martin (2015) reported that narcissism was not associated with engagement in cyberbullying behaviors. It is possible that the different conceptualizations of power imbalance interact, such that individuals who believe they are unidentifiable due to usage of technology are more likely to engage in cyberbullying behaviors and intentionally target repeated cyberbullying attacks against those who perceive themselves as powerless to stop the attacks, leading them not to retaliate or retaliate in the desired manner.

**Repetition**

A second concept that is problematic in definitions of cyberbullying is repetition. In definitions of traditional bullying, repetition is characterized as engagement in aggressive behaviors over time by the same perpetrator or group of perpetrators against the same target (Olweus, 1993, 1994, 1999). This conceptualization can be extended from physical forms of bullying to relational forms of bullying. In this extension, *starting* rumors may be classified as bullying if the action is targeted toward the same individual over time, whereas *spreading* rumors may not be considered bullying due to the involvement of novel actors and the different paths that a rumor may take through a given closed social network.

The introduction of technology complicates the concept of repetition by increasing the visibility and number of potential social network connections available to the perpetrator, and this has led some researchers to advocate for the removal of repetition as a distinguishing characteristic of cyberbullying or the assertion that repetition is best used as a proxy for another distinguishing characteristic. Other researchers have conceptualized repetition in terms of the number of completed acts by a
single perpetrator, and still others conceptualize repetition as the number of times a specific behavior has been completed by a single individual regardless of the target. Finally, some researchers have suggested that repetition is best used as a proxy for another distinguishing characteristic.

Baldasare et al. (2012) and others (Menesini et al., 2012; Spears et al., 2009) have reported that the general public does not include repetition in their definition of cyberbullying. For many participants in these groups, a single act of cyberaggressive behavior could become cyberbullying due to the existence of an infinite audience as opposed to the relatively closed audience experienced by victims of traditional forms of bullying. This virtual audience both increases the number of people who can possibly see the act and the number of potential originators of new behaviors, and can also allow the act to cross between social spheres. As an example, an embarrassing picture posted on a social network can spread within the victim’s varied social circles connected by that site, leading to feelings of isolation.

Some researchers have cited the ease that a single incident can spread within a given social network as a reason to remove repetition from the definition of cyberbullying or to study the characteristic as a proxy. Alternatively, some researchers have begun to classify this spread within an individual’s social network as repetition. Dooley et al. (2009) and others (Menesini & Nocentini, 2009; Slonje, Smith, & Frisén, 2012; Slonje et al., 2013) have suggested that this type of repetition is the most relevant in the cyberrealm. These researchers define repetition in terms of the act itself. According to these researchers, repetition occurs when the original cyberbullying act is shared by anyone within the target’s larger social network. For example, if a person shares an
original post that is embarrassing to the target within a specific social network, subsequent shares of that information within the target’s social network qualify as repetition. Slonje et al. (2012) reported that 9% of individuals who viewed potentially embarrassing information proceeded to forward that information to others within their social network. These researchers also reported that 6% of their sample reported intentionally showing the material to the target in order to cause further embarrassment.

Repetition has also been conceptualized as a pattern of behavior established by the perpetrator. Many recent studies (Doane et al., 2013; Gibb & Devereux, 2014; Kowalski et al., 2014; Whittaker & Kowalski, 2014) define repetition as the completion of cyberbullying behaviors, such as texting threatening messages to others, within a specified time period. This period of time differs between studies, ranging from 2 – 3 months but has included the length of the participant’s time at an institution (e.g., Doane et al., 2013; Gibb & Devereux, 2014). These studies have not asked about the target of the behavior, but instead have focused on establishing patterns of behavior by the perpetrator.

It has also been proposed that repetition is best conceptualized as a proxy variable for intentionality (P. K. Smith et al., 2013). It is theorized that individuals who intend the behavior as a joke or do not intend to cause distress would only engage in a behavior they believed caused no real harm to the target and would stop the behavior once it was discovered that harm was being done. This is similar to the idea that someone who repeatedly hits another likely intends to cause harm to his or her target. This is contrasted with someone who jumps out from behind a door and noticeably causes harm to his or her target and does not repeat the behavior.
Focus group studies (Baldasare et al., 2012; Menesini et al., 2012; Spears et al., 2009) suggest that the general public does not include repetition as a distinguishing characteristic of cyberbullying. Instead, an act can become cyberbullying due to the potentially infinite audience. This has been embraced by some researchers who have focused on the repetition of the act within a given social network (Dooley et al., 2009; Menesini & Nocentini, 2009; Slonje et al., 2012, 2013). Other researchers (Doane et al., 2013; Gibb & Devereux, 2014; Kowalski et al., 2014; Whittaker & Kowalski, 2014) focus on a general pattern of behavior by the perpetrator and exclude the target. It has also been suggested that repetition itself is not a distinguishing characteristic but is instead a proxy variable for intentionality (P. K. Smith et al., 2013), although this relationship has not been empirically established within the literature. Similar to power imbalance, it is likely that the different conceptualizations of repetition interact.

Individuals who engage in primary forms of cyberbullying behavior such as sending threatening text messages may also be more likely to engage in secondary forms of cyberbullying, such as forwarding or sharing embarrassing photos/rumors.

**Intentionality**

A desire to cause harm to a target by an actor, the belief by an actor that a behavior will cause harm to a target, as well as an understanding that the target would be motivated to avoid experiencing the behavior characterizes intentionality within traditional aggression/bullying definitions (C. A. Anderson & Bushman, 2002; Bushman & Anderson, 2001; Bushman & Huesmann, 2010). Intentionality in the cyberrealm may be harder to determine due to several factors. Non-verbal cues and the synchronous nature of responses within real world forms of communication are typically not available.
During face-to-face communication, these characteristics help ascertain the intentionality of the actor. A look of concern for another’s welfare after a bump or an immediate negative reaction after sharing a piece of information that is embarrassing to a member of the social network often stops the behavior. These cues are often not available during computer-mediated communication (CMC), although researchers who have focused on CMC have noted that language specific cues develop through prolonged interaction that serve the same function as these non-verbal cues (Lea & Spears, 1992; Walther, Anderson, & Park, 1994).

Other researchers have noted that interaction partners do not necessarily perceive cues developed during prolonged CMC. In a focus group held by Baldasare et al. (2012), participants reported that CMC increased their feelings of uncertainty regarding the intentionality of others. These participants reported that the intentionality behind behaviors typically associated with cyberbullying, such as posting embarrassing pictures or information, was especially hard to ascertain. Participants also noted that it was the perception of intentionality by the target as opposed to the expressed intentionality of the actor that should determine if an action was cyberbullying (Baldasare et al., 2012; Nocentini et al., 2010), a view not entirely supported within the traditional aggression literature.

Traditional aggressive behaviors are classified by the intention of the actor (C. A. Anderson & Bushman, 2002; Bushman & Anderson, 2001; Bushman & Huesmann, 2010), not the target. Gibb and Devereux (2014) used this conceptualization to directly assessed global intentionality of the perpetrator. These researchers reported that a majority of individuals who engaged in measured behaviors intended to cause at least
some distress to their target. It is likely that self-presentation bias may have led to some participants *underreporting* the amount of distress they intended to cause. Giménez Gualdo et al. (2014) and others (Raskauskas & Stoltz, 2007) reported similar results with adolescent samples who engaged in cyberbullying behaviors, reporting findings showing participants who engaged in cyberbullying behaviors intended to cause harm to their targets. Unfortunately, a large number of published studies that focus on cyberbullying behaviors did not include measures of intentionality (e.g., Doane et al., 2013; Doane, Pearson, & Kelley, 2014; Kowalski, Giumetti, Schroeder, & Reese, 2012; MacDonald & Roberts-Pittman, 2010). This opens the possibility that individuals who engaged in the behaviors measured did so believing it to be a harmless joke.

Directly evaluating intentionality within a study may help to clarify its role of within cyberbullying. Due to possible differences in perception, it is important to measure 1) the perpetrators intent, 2) the perpetrators perception of actual harm caused to the target, 3) the victim’s perception of intent, and 4) the actual experienced distress associated with the behavior. Measurement of all four forms of intentionality will help link the developing cyberbullying literature with the established aggression literature reviewed above.

**Proposed Other Distinguishing Factors**

Other researchers have suggested that not all of the distinguishing characteristics are currently included in the proposed definitions of cyberbullying. These characteristics include how public the attack is (publicity) and the way the behavior was transmitted to the target (medium of attack). A separate characteristic, the requirement that the behavior occur within a closed social network, has received no attention within the field.
Publicity and medium of attack. Pieschl, Kuhlman, and Porsch (2014) reported the existence of a link between how public an attack was and self-reported level of distress of the target of the attack. Attacks that were private such as threatening text messages were rated as less distressful than attacks that were more visible such as posting embarrassing information on a social network profile. The medium of attack has also been proposed to influence experienced distress. When publicity was controlled for, individuals who experienced cyberbullying via visual medium such as an embarrassing video or photograph reported experiencing significantly more distress than individuals who experienced a text based form of cyberbullying (Pieschl et al., 2013). Other researchers that have examined the role of medium in cyberbullying have failed to find a significant link however (Bauman & Newman, 2012). It is important to note that these researchers utilized an adolescent sample, and levels of experienced distress may differ for older populations.

Closed social network. The current study includes in its definition the idea that cyberbullying occurs within a closed social network. This contrasts the behavior with more general forms of cyberaggression such as online trolling, where an individual behaves in deceptive, destructive, or disruptive manner in a social setting on the Internet with no apparent purpose (Buckels, Trapnell, & Paulhus, 2014). Examples of trolling include posting comments to discussion boards that are believed to be inflammatory to the typical participants and has led to the common saying to “not feed the trolls” when such comments are posted. In contrast, cyberbullying behaviors are typically targeted directly at one person and, although not expressly stated by the perpetrator of such
attacks, often damage the social connections of the target by causing embarrassment or feelings of isolation (Dooley et al., 2009; Wright, 2014).
Chapter IV: Predictors of Cyberbullying

A majority of studies examining cyberbullying behaviors have utilized adolescent samples (Li, 2006; Slonje et al., 2013; Tokunaga, 2010; Ybarra & Mitchell, 2004a, 2004b) although there is a growing body of research on cyberbullying in college populations as well (Baldasare et al., 2012; Barlett & Gentile, 2012; Barlett et al., 2013; Goodboy & Martin, 2015; MacDonald & Roberts-Pittman, 2010). Most of this research has focused on individual-level predictors including personality traits or individual victim status. It is likely that similar to cultural predictors of general aggression (Boxer et al., 2013; Cummings et al., 2010), cultural predictors of cyberbullying also exist. It is therefore important that any profile of individuals who engage in cyberbullying behaviors include cultural components allowing for the development of the behaviors.

Culture of Honor Norms

Previous studies have found a significant link between exposure to cultural examples of aggression and future engagement in aggressive behaviors (Boxer et al., 2013; Kuppens et al., 2009a, 2009b). Cultural norms supporting of aggression have also been linked to engagement in aggressive behaviors. One specific set of cultural norms known as culture of honor norms (COH; Cohen & Nisbett, 1994; Nisbett, 1993) have been found to influence the acceptance of aggressive behaviors by others as well as increase individual propensity to engage in both physical (Cohen & Nisbett, 1997; Cohen, Nisbett, Bowdle, & Schwarz, 1996) and relational (M. K. Jones, 2010) forms of aggression. Acceptance of these norms are typically observed more in the Southern United States as well as other areas of the country settled heavily by Southerners such as the Western United States (Cohen & Nisbett, 1994; Cohen et al., 1996). Similar to
engagement in physical and relational forms of aggression, individual acceptance of COH norms may be predictive of engagement in cyberbullying behaviors.

COH norms prescribe increased vigilance toward possible acts of aggression as well as dictate that threats be resolved in such a way as to inform the surrounding community that the individual is willing to cause severe harm to anyone who would threaten the individual (Nisbett, 1993).

Definitions applied in research on COH norms specify that the focus of COH norms is on a male’s ability to be held in high regard, exemplified by his ability to control his children in public or be taken as ‘a man of his word’, by being able to protect what is ‘his’ such as his family or personal property as well as his identity as a man (Bosson & Vandello, 2011; Bosson, Vandello, Burnaford, Weaver, & Arzu Wasti, 2009; Cohen & Nisbett, 1994; Nisbett, 1993; Vandello, Bosson, Cohen, Burnaford, & Weaver, 2008). Brown, Osterman, and Barnes (2009) also provided support for the idea that individuals who accept culture of honor norms are likely to engage in aggressive behaviors when they perceive a threat to an important identity. In these conceptualizations, physically aggressive behaviors are the appropriate response to some transitive quality being threatened or taken away from the individual.

Connecting several different research lines, Henry (2009) suggested that the extreme forms of aggression accepted and encouraged by COH cultures is due to the need to protect a threatened sense of self. In a series of studies examining the role of status on the murder rates of non-Hispanic White males in the South it was found that more murders occurred in areas where large income disparities, and by proxy large disparities in perceived self-worth, were evident. This effect remained even when herding status and
overall county wealth was controlled for (Henry, 2009). Henry (2009) also provided evidence that supported the idea that low status (but not high status) individuals utilized aggressive responding styles when they were insulted or threatened.

Other studies that have examined identity threats support this idea. Studies that have examined male intimate partner violence have shown an increase in aggressive behaviors when masculine identities are threatened, especially when the individual is a member of a heavily male-centered group that condones such behaviors (Boeringer, 1999; DeKessereddy et al., 2005; Forbes, Adams-Curtis, Pakalka, & White, 2006). DeKessereddy (1988) as well as others (DeKessereddy et al., 2005; Schwartz et al., 2001) have reported results that real or perceived threats to masculine identities such as sexual performance problems or threats to the man’s authority result in sexually aggressive behaviors. These aggressive behaviors are not typically observed in individuals who engage in individual aggressive sports, suggesting that one important factor is the individual’s group identity (Sawyer, Thompson, & Chicorelli, 2002).

In one of the more famous set of social psychological studies, Cohen et al. (1996) exposed both non-Southern and Southern White males to a personal honor threat by having a confederate call them a derisive name and then measured the participant’s aggressive tendencies across several domains. First, Southerners who had been threatened in this way were more likely than Northerners to report that they would engage in physical aggression against a man who had made a pass at their fiancée. Second, Cohen et al. (1996) reported that insulted Southerners had increased testosterone and cortisol blood levels compared to both non-insulted Southerners and insulted Northerners. The authors suggested that this increase was due to the participant’s preparation to engage in
some form of overt aggressive behavior. In a follow-up study, insulted Southern males were less likely to move to avoid hitting another individual who was walking down a narrow hallway than non-insulted Southerners, and these participants were rated as behaving more socially dominant in interpersonal interactions than non-insulted individuals (Cohen et al., 1996). Similar to the first study, Southerners who had been insulted were also more likely to report that an actor in an ambiguous situation would engage in aggressive behaviors when insulted (Cohen et al., 1996).

These observed experimental differences coincide with larger level survey data as well as field studies (Cohen & Nisbett, 1997) regarding interpersonal aggression in the South (Cohen & Nisbett, 1994; Nisbett, 1993). Compared to Northern states, Southern states and those states settled by a high number of Southerners such as Oklahoma tend to accept aggressive responses to both reputational and physical interpersonal threat at significantly higher rates (Cohen & Nisbett, 1994, 1997; Nisbett, 1993). Other instances of physical aggression, such as a police officer striking a man who was being questioned for murder or assaulting a man who had broken into a house, did not show such regional differences.

Evidence supporting the existence of COH norms has also been found in samples drawn from other parts of the world (Cross et al., 2012; Vandello & Cohen, 2003). Cross et al. (2012) reported that participants from Turkey responded similarly to participants from the Southern U.S. when faced with an honor threat. This was especially true when the participant experienced a threat to their personal honor (Cross et al., 2012). Vandello and Cohen (2003) examined COH norms and female intimate partner violence in both the U.S. and Brazil, noting that there was not a significant difference between the two areas
in the expectation that a woman should stay with a man who had physically assaulted her if she had shamed him in some way.

Culture of honor norms also prescribe behaviors designed to protect against aggressive behaviors, with norms regarding *politeness* linked to COH acceptance. These politeness norms typically dictate that small insults such as walking by a friend and not being acknowledged or greeted should be largely ignored. These prescriptions against aggressive behavior may have developed as a response to the extreme nature of the aggressive response called for by COH norms (Cohen, Vandello, Puente, & Rantilla, 1999). Evidence supporting this idea comes from both cross-cultural examples (Cross et al., 2012) as well as from studies within the United States (Cohen et al., 1999).

Cross-culturally, participants from COH societies were more likely to report reacting with politeness when confronted with a rude individual. Individuals from these societies were also more likely to report an expectation that other cultural members would behave in a similar manner (Cross et al., 2012). In experimental studies within the U.S., a stark distinction emerged between individuals who were from a COH area and those who were not. In interactions with a ‘rude’ individual, participants who did not come from a COH region were more likely to engage in a culturally and personally acceptable measured aggressive response, with this response decreasing as it became evident that it was ineffective at stopping the rude behavior (Cohen et al., 1999). These same measured responses were not observed in individuals from areas accepting of COH norms. Southerners in the study were less likely to react until as Cohen et al. (1999) put it “a line in the sand had been crossed” and the participants exploded with relatively extreme examples of aggressive behavior. Further analysis showed that Southerners were
not taking longer to experience annoyance at the behavior, but instead were taking longer to express their annoyance (Cohen et al., 1999).

**Culture of honor and cyberbullying.** Several factors suggest that individuals who are accepting of COH norms should engage in cyberbullying behaviors at higher rates than individuals who do not hold these norms. First, individuals who endorse COH norms are more likely to be hyper-vigilant to threats directed toward the self (Brown et al., 2009; Cohen & Nisbett, 1994; Cohen et al., 1996; Henry, 2009) similar to hostile attribution style (de Castro et al., 2002; Dodge, 1980; Dodge et al., 1986). Computer mediated communication (CMC) may increase the likelihood that threats will be ‘detected’ due to a lack of other non-verbal cues associated with the medium (Baldasare et al., 2012). It is also possible that individuals will escalate online interactions by engaging in virtual duels with each participant engaging in a more ‘extreme’ form of cyberbullying behavior. The public nature of many forms of cyberbullying may also increase the probability that an individual who endorses COH norms will engage in some form of retaliatory behavior. Individuals who endorse COH norms should also be more sensitive and more reactive to threats coming from within their online social network due to the threat to an important identity, similar to the reaction to threats to masculinity observed by Bosson and Vandello (2011) and Bosson et al. (2009). It is also possible that individuals will do the polite thing and choose to dis-engage from an interaction before they experience a significant threat, although due to the low level of threat associated with the medium this likelihood may be decreased.
Individual-level Predictors

At present, the link between acceptance of COH norms (Cohen & Nisbett, 1994; Nisbett, 1993) and engagement in behaviors labeled as cyberbullying remains theoretical. The link between individual factors such as sub-c clinical psychopathy or age are better established within the literature, although these links are not always reliable. Age and gender have been linked to cyberbullying behaviors in some studies, and other studies have failed to find the link. Other factors such as sub-clinical psychopathy and victim status are more reliable with a majority of studies finding significant relationships between the factors and the cyberbullying behaviors. It is also theorized that other factors not yet explored also contribute to the likelihood an individual would engage in cyberbullying behaviors.

Age. Similar to traditional forms of aggression, traditional (physical) forms of bullying typically decline with age although the behaviors do not disappear entirely (Chapell et al., 2006; Wang et al., 2009) (Chapell et al., 2004). Rates of relational forms of bullying have been shown to remain stable during this same time period and are among the most common forms engaged at the college level (Björkqvist, Lagerspetz, et al., 1992; Chapell et al., 2004; Chapell et al., 2006; Wang et al., 2009). Studies that have examined cyberbullying behaviors have found mixed results. Some studies have found that as age increases, cyberbullying behaviors decrease (Kraft & Wang, 2010; Lapidot-Lefler & Dolev-Cohen, 2014; Raskauskas & Stoltz, 2007; Tokunaga, 2010; K. R. Williams & Guerra, 2007). Supporting this idea, one study examining cyberbullying behaviors in college students found that for every year increase above 22 the odds of engaging in a measured cyberbullying behavior decreased (Gibb & Devereux, 2014).
Other studies have found that rates of cyberbullying increase between the ages of 11 and 18 (P. K. Smith et al., 2008; Vandebosch & Van Cleemput, 2009), possibly linked to increased unsupervised technology use. Still other studies have failed to find a significant association between cyberbullying behaviors and age (Beran & Li, 2007; Didden et al., 2009; Juvonen & Gross, 2008; Patchin & Hinduja, 2006).

**Gender.** Physically aggressive behaviors are typically gendered, with gender differences decreasing as a function of age but remaining statistically significant (Archer, 2004; Basow et al., 2007; Chapell et al., 2004; Chapell et al., 2006; Schober et al., 2009; Storch et al., 2004; Wang et al., 2009). This decrease in gender differences is also noted in relational aggression. Unlike physical aggression, rates of relational aggression do not decrease, remaining elevated in women past adolescence and increasing in men (Archer, 2004; Björkqvist, 1994; Rose et al., 2004; Schober et al., 2009; Vaillancourt et al., 2007). Studies that have examined gender in relation to cyberbullying behaviors have reported men are more likely to engage in these behaviors (Calvete, Orue, Estévez, Villardón, & Padilla, 2010; Lapidot-Lefler & Dolev-Cohen, 2014; Li, 2006; Slonje & Smith, 2008; Vandebosch & Van Cleemput, 2009). Other studies have reported that women are more likely to engage in cyberbullying behaviors (Dilmac, 2009; Kowalski & Limber, 2007; Rivers & Noret, 2010; Sourander et al., 2010). Still other studies have failed to find significant gender differences in engagement (Gibb & Devereux, 2014; Kokkinos, Antoniadou, & Markos, 2014; Kowalski et al., 2012; MacDonald & Roberts-Pittman, 2010; Patchin & Hinduja, 2006; P. K. Smith et al., 2008).

One possible explanation for the discordant results is differences in what types of behavior engaged in by each gender. Gibb and Devereux (2014) reported that although
there was no significant difference in engages in cyberbullying behaviors, men were more likely to engage in a wider range of behaviors. It is possible that the instrument used in the study influenced this result. Similar to the observed gender effects in more traditional forms of aggression (Archer, 2004; Basow et al., 2007; Schober et al., 2009) men may engage in more direct forms of cyberbullying such as sending threatening messages via email or text than women, who may engage in more indirect forms of cyberbullying such as purposefully excluding someone from an online group.

**Past experience (victim status).** One of the most reliable findings within the cyberbullying literature is the link between past experience with both traditional and cyber- bullying behaviors and current engagement in cyberbullying behaviors. Adolescents who reported engaging in traditional forms of bullying also reported engaging in cyber forms of bullying (Abbey, 1982; Dilmac, 2009; Lapidot-Lefler & Dolev-Cohen, 2014; Vandebosch & Van Cleemput, 2009), leading some of these researchers to suggest that cyber forms of bullying are not unique and are merely extensions of traditional bullying behaviors (Lapidot-Lefler & Dolev-Cohen, 2014; Li, 2007). Being the target of cyberbullying behaviors has been found to be predictive of future engagement in similar behaviors, with positive victim status increasing the relative risk associated with engagement in cyberbullying type behaviors (Gibb & Devereux, 2014). This link has been explored in a longitudinal study as well (Barlett & Gentile, 2012; Barlett et al., 2013), although it remains uncertain if individuals who are the victims of cyberbullying behaviors engage in similar behaviors before or after being targeted.
**Dark Triad Personality Traits.** Along with individual demographic factors and experiential differences, personality traits have also been found to be predictive of engagement in cyberbullying behaviors. Sub-clinical psychopathy and Machiavellianism, two of the three Dark Triad (D. N. Jones & Paulhus, 2011; D. L. Paulhus & Williams, 2002) personality traits, have been theorized to be predictive of engagement in cyberbullying behaviors. Both sub-clinical psychopathy and Machiavellianism are typically measured in general, non-clinical / non-forensic populations. Despite this measurement level, there is no evidence to support the idea that these traits are any less harmful or damaging to others than these same traits measured at the clinical level (Ray & Ray, 1982).

Sub-clinical psychopathy and Machiavellianism are both related to general social malevolence (Furnham, Richards, & Paulhus, 2013), interpersonal forms of aggression (Baughman, Dearing, Giammarco, & Vernon, 2012; Reidy, Zeichner, Foster, & Martinez, 2008), and low levels of agreeableness (Johnson, Vernon, & Feiler, 2008; D. Paulhus, 1983), which has been linked in turn to engagement in both indirect and direct forms of aggression (Barlett & Anderson, 2012; Gleason, Jensen-Campbell, & Richarson, 2004; Sharpe & Desai, 2001).

**Sub-clinical Psychopathy.** Sub-clinical psychopathy is one of the two Dark Triad personality traits (D. N. Jones & Paulhus, 2011; D. L. Paulhus & Williams, 2002). Individuals who score high on this trait typically exhibit high levels of impulsivity, an increased likelihood of engaging in thrill seeking behaviors (Neuman & Hare, 2008; Neuman, Hare, & Newman, 2007). It is possible that this high level of impulsivity may pre-dispose individuals to engage in aggressive behaviors, especially when they feel they
have been slighted in some way. Sub-clinical psychopathy has also been linked to low levels of empathy and social anxiety (Lilienfeld & Andrews, 1996; D. L. Paulhus & Williams, 2002).

The link between sub-clinical psychopathy and general forms of aggression as well as traditional bullying behaviors, has been established. Individuals who report high levels of sub-clinical psychopathy typically report difficulty generating the appropriate emotional response to others (Penner, Dovidio, Piliavin, & Schroeder, 2005) and difficulty in determining another’s emotional state (Wai & Tillopoulos, 2012). Importantly, these difficulties have been linked to traditional bullying behaviors (Baughman et al., 2012). Björkqvist and Osterman (2000) as well as other researchers (Fanti, Frick, & Georgiou, 2008; Kaukialnen et al., 1999; Neuman & Hare, 2008) have reported that individuals who report low levels of empathy report higher rates of both proactive and reactive aggressive behaviors. Given this link, it is likely that the reduction in observable emotional cues due to technology cited by participants in focus groups (Baldasare et al., 2012; Raskauskas & Stoltz, 2007) may lead to the observed increased risk. General personality factors, such as a lack of social skills, a callous and unemotional responses style, and impulse control problems have been linked to engagement in cyberbullying type behaviors (Kokkinos et al., 2014).

Sub-clinical psychopathy has also been directly linked to engagement in cyberbullying behaviors. Gibb and Devereux (2014) reported that individuals who scored high on a measure of sub-clinical psychopathy were approximately 2 times as likely to also report engaging in at least one cyberbullying behavior. Similar results were
published by Goodboy and Martin (2015), and Buckels et al. (2014) who examined online trolling behaviors.

**Machiavellianism.** Machiavellianism is typically characterized by a cold and manipulative pattern of behaviors, including but not limited to negative behaviors designed to gain or maintain influence over others (Christie & Geis, 1970). Individuals that score high on this Dark Triad trait typically report low levels of affective empathy (Wai & Tillopoulos, 2012) and report suspecting ulterior motives of others (Rauthmann, 2012; Rauthmann & Kolar, 2012). This is similar to individuals who hold hostile attributions of intent (de Castro et al., 2002; Dodge, 1980; Dodge et al., 1986), an attributional style linked to engagement in traditional forms of aggression. Acceptance of Machiavellian attitudes is also linked with proactive, but not reactive, forms of aggression (Fanti et al., 2008; Kerig & Stellwagen, 2010). These individuals are also more likely to report utilizing relational forms of aggression compared to more direct forms of aggression (Kerig & Stellwagen, 2010). This personality trait has been directly linked to traditional forms of bullying behavior in both adolescents (Sutton & Keogh, 2000) and adults (Baughman et al., 2012) as well as online trolling behaviors (Buckels et al., 2014).

Despite being theoretically linked to engagement in cyberbullying behaviors, past studies have failed to find such a link. Gibb and Devereux (2014) as well as Goodboy and Martin (2015) reported that there was no significant link between Machiavellianism and engagement in cyberbullying behaviors when controlling for sub-clinical psychopathy. It is of note that a revised model reported by Gibb and Devereux (2014) was suggestive of such a link. It remains theoretically important to continue to examine Machiavellianism
to understand the possibility of a link between the personality trait and engagement in cyberbullying behaviors.

**Sadism.** The Dark Triad (D. N. Jones & Paulhus, 2011; D. L. Paulhus & Williams, 2002) has recently been expanded to include sub-clinical sadism, forming a ‘Dark Tetrad’ of personality traits (Buckels, Jones, & Paulhus, 2013a; Chabrol, Van Leeuwen, Rodgers, & Séjourné, 2009). First measured in clinical populations, the sadistic personality trait is typically characterized by a pattern of cruel, aggressive and demeaning behavior. These individuals typically inflict physical, sexual or psychological pain or suffering on others in order to assert power and dominance. These individuals may also engage in these behaviors for pleasure and enjoyment (Chabrol et al., 2009; O'Meara, Davies, & Hammond, 2011). This trait has been found to exist within non-clinical samples as well (Buckels et al., 2013a; Buckels et al., 2014; Chabrol et al., 2009; O'Meara et al., 2011) although this trait has yet to be empirically linked to traditional bullying behaviors or aggressive behaviors in general.

Despite the lack of research linking sadism with traditional bullying or aggressive behaviors, sadism has been linked to online trolling behaviors (Buckels et al., 2014). Trolling, or behaving in a deceptive, destructive, or disruptive manner in a social setting on the Internet with no apparent instrumental purpose (Buckels et al., 2014), is characteristically less personal than other forms of cyberbullying behavior. Indeed, in one study that interviewed ‘trolls’ in one online forum, individuals who engaged in the practice did so due to boredom, attention seeking, revenge, pleasure, and a desire to disrupt the community (Shachaf & Hara, 2010). Despite the impersonality of typical
trolling behavior, it is possible that sadism is also linked with engagement in cyberbullying behaviors.
Chapter V: Current Studies

The definition of cyberbullying (i.e., the use of personal technology to commit repeated behaviors intended to cause harm against a target that cannot easily defend her/himself against the attack due to a power imbalance; Sabella et al., 2013; Slonje et al., 2013; P. K. Smith et al., 2013; P. K. Smith et al., 2008; Tokunaga, 2010) draws heavily from the definition of traditional bullying behavior proposed by Olweus (1993, 1994, 1999). Despite some evidence that researchers are beginning to coalesce around a common definition (e.g., Slonje et al., 2013; P. K. Smith et al., 2013; Tokunaga, 2010) researchers continue to propose their own definitions (Baldasare et al., 2012; Nocentini et al., 2010; Walker, 2014). There are also issues surrounding the inclusion of the distinguishing characteristics used to discriminate cyberbullying behaviors from more general forms of cyber-aggression. Results by Baldasare et al. (2012) and others (Menesini et al., 2012; Spears et al., 2009) suggest that the general public does not include repetition as a distinguishing characteristic of cyberbullying. There are also issues on how the distinguishing characteristics should be defined. Some researchers define repetition in terms of the behavior, with repetition occurring as the behavior spreads through an individual’s social network (Dooley et al., 2009; Slonje et al., 2012, 2013). Other researchers suggest that a pattern of behavior is enough to qualify as repetition (Doane et al., 2013; Gibb & Devereux, 2014; Kowalski et al., 2014; Whittaker & Kowalski, 2014). Relatedly, Pieschl et al. (2014) and others (Pieschl et al., 2013) suggest that the list of distinguishing characteristics is incomplete (see Appendix A for a summary of the definitional issues in the cyberbullying literature) although the empirical support for the inclusion of other characteristics remains limited.
As issues surrounding the distinguishing characteristics of cyberbullying continue to be debated within the literature, some researchers (Bauman, 2013; Bauman & Bellmore, 2014; Bauman, Underwood, et al., 2013) have suggested that studies focus instead on cyberaggression (Bauman, Underwood, et al., 2013; Grigg, 2010). Despite these calls, the current studies focus on understanding both the cultural and personal factors related to cyberbullying behaviors. Factors previously established to predict engagement in behaviors labeled as cyberbullying such as sub-clinical psychopathy as well as new factors proposed to be associated with the behavior are explored in these studies.

Much of the research on cyberbullying/cyberaggression has been completed using survey methodologies. Some of these studies (e.g., Barlett, 2015; Barlett et al., 2013; Gibb & Devereux, 2014) have provided evidence supporting a link between self-reports of experience with cyberbullying behaviors (as either victim or perpetrator) and future engagement. There remains, however, no behavioral evidence to support this link. Study 2 focuses on this link and seeks to examine the occurrence of cyberbullying behaviors within online settings by examining the frequency of intentional exclusion from an online group (cyber-ostracism; K. D. Williams, Cheung, et al., 2000) by individuals who have previously reported engaging in cyberbullying behaviors. Study 2 also examines the link between ostracism and norms prescriptive of aggressive behavior (Nisbett, 1993). Utilizing a similar methodology as previous studies (e.g., Cohen et al., 1999), it is expected that participants who come from areas accepting of COH norms and have had group membership threatened will increase their self-reported acceptance of these norms.
Study 1 was designed to examine these problems and expand the profile of individuals who engage in cyberbullying behaviors.

Most current studies on cyberbullying utilize survey methodology. It is important that the field surrounding cyberbullying begins to examine actual behaviors. Examination of actual cyberbullying behaviors will increase support for the proposed reasons for cyberbullying. One such reason is that individuals who engage in CBBs do so in response to a perceived slight. Study 2 was designed to test this reason by exposing participants to a group situation where they are being actively ostracized by other group members. It is believed that these participants will be more likely to engage in CBBs themselves when given the chance.
Chapter VI: Study 1 Overview

Study 1 was designed to increase the knowledge surrounding cyberbullying behavior. Specifically, the current study places cyberbullying within the general aggression literature by examining engagement rates among college students, a population expected to be less aggressive than younger samples. Some studies have reported significant decreases in cyberbullying behavior (e.g., Kraft & Wang, 2010; Lapidot-Lefler & Dolev-Cohen, 2014) as individuals age. These results are similar to observed decreases in rates of physical aggression and traditional bullying behaviors (e.g., Archer & Coyne, 2005; Chapell et al., 2004; Chapell et al., 2006). Other studies have either failed to find a significant relationship between age and engagement in cyberbullying behaviors (e.g., Beran & Li, 2007; Didden et al., 2009) or have found an increased rate (e.g., Mason, Conrey, & Smith, 2007; P. K. Smith et al., 2008) similar to rates of relational aggression (e.g., Crick, 1995; Crick & Grotpeeter, 1995). Given the consequences associated with cyberbullying behavior in both the academic (Kraft & Wang, 2010; Schenk & Fremouw, 2012; Schenk et al., 2013; Young-Jones et al., 2014) and personal spheres (Kraft & Wang, 2010; Na et al., 2015; Schenk & Fremouw, 2012; Schenk et al., 2013; Tennant et al., 2015), it is important to understand if and how engagement in cyberbullying behaviors shift as individuals age.

It is also important to understand what factors play a part in predisposing individuals to engage in cyberbullying behaviors. First, it is important to understand what risk is associated with engaging in cyberbullying behaviors. Both the SIP theory of aggression (Crick & Dodge, 1994) and the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992), suggest that
individuals will engage in aggressive behaviors they believe are relatively risk free. In the current study, this is operationalized by the degree that the perpetrator believes that there will be no recrimination from the target, from others in their social network, or from institutions (RQ 1; Table 6.1).

The link between previously established predictors of engagement in cyberbullying behaviors such as age, gender, and sub-clinical psychopathy is also examined in the current study. The current study examines cultural factors believed to be predictive of engagement in cyberbullying behaviors in addition to the previously established factors (RQ 2; Table 6.1). According to the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992) and consistent with previous studies on cyberbullying (Barlett & Gentile, 2012; Kokkinos et al., 2014) it is expected that there will be no gender differences in engagement in cyberbullying behaviors (RQ 2.1; Table 6.1). Previous studies have also found mixed results for other predictors such as age (Beran & Li, 2007; Kraft & Wang, 2010; P. K. Smith et al., 2013), and more stable relationships with other factors such as positive victim status (Barlett & Gentile, 2012; Barlett et al., 2013; Dilmac, 2009). By examining the link between these predictors and cyberbullying behaviors it is hoped that a better profile of who engages in these behaviors can be developed. It is also hoped that these findings can lead to a better understanding of how to prevent these behaviors from occurring.

In line with the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992) and in contrast to the SIP theory of aggression (Crick & Dodge, 1994), it is expected that there will be gender differences in
the *range* of behaviors an individual engages in (RQ 3; Table 6.1). These gender differences should be the result of differences in the *type* of behavior engaged in, with men engaging in more direct forms compared to women. The current study also investigates whether or not normative beliefs (RQ 3.1; Table 6.1), or perceptions of behavioral reinforcement (RQ 3.2; Table 6.1) mediate the relationship between gender and the range of cyberaggressive behaviors.

It is also important to understand what, if any, role personal (RQ 3.3; Table 6.1), social (RQ 3.4; Table 6.1), of institutional (RQ 3.5; Table 6.1) risks play in the range of behaviors an individual engages in. The current study also seeks to understand if the proposed distinguishing characteristics are related to a wider range of and more recent engagement in cyberbullying behaviors (RQ 4; Table 6.1).

The link between culture of honor norms (Cohen & Nisbett, 1994; Nisbett, 1993) and engagement in cyberbullying behaviors is also examined which is underexplored in the literature. In several studies, individuals who engaged in cyberbullying did so as the result of a perceived slight (Femlee, 2003; König et al., 2010; Law, Shapka, Domene, & Gagné, 2012). It is expected that individuals who express high levels of COH acceptance will be more likely to engage in cyberbullying behaviors (*Hypothesis 1*; Table 6.1). It is also expected that men who endorse high levels of COH norms will be more likely to engage in cyberbullying behaviors than similar men (*Hypothesis 1a*; Table 6.1). It is expected that women who endorse COH norms will be more likely to engage in cyberbullying behaviors compared with similar women (*Hypothesis 1b*; Table 6.1).

Previous studies have shown individual variability in the range of cyberbullying behaviors engaged in, so it is expected that individuals who endorse COH norms will also
engage in a wider range of cyberbullying behaviors (*Hypothesis 2*; Table 6.1). Similar to Hypothesis 1, two additional hypotheses are proposed in relation to the range of behaviors. Previous studies (Gibb & Devereux, 2014) found that men, compared to women, reported a wider *range* of cyberbullying behaviors. It is expected COH acceptance will mediate the observed gender effect, such that men who endorse COH norms will be more likely to report engaging in a wider range of behaviors than men who report low levels of COH acceptance (*Hypothesis 2a*; Table 6.1). It is also expected that women who endorse COH norms will report engaging in a wider range of behaviors than women (*Hypothesis 2b*; Table 6.1).

The current study also seeks to further expand the literature surrounding COH norms. First, a majority of studies have examined COH norms by grouping individuals by geography (Cohen et al., 1999; Cross et al., 2012). The current study examines expressed individual acceptance of COH norms within a geographical context. Similar to the results of Figueredo, Tal, McNeil, and Guillén (2004), it is expected that individuals who grew up within a COH state will report elevated levels of COH norm acceptance on individual measures of COH (*Hypothesis 3*; Table 6.1). Consistent with the COH literature (Cohen, 1998; Cohen & Nisbett, 1994, 1997; Cohen et al., 1996; Cohen et al., 1999), it is expected that men will report higher COH norm acceptance compared to women from the same area (*Hypothesis 3a*; Table 6.1).

Table 6.1

<table>
<thead>
<tr>
<th>Study 1 Research Questions and Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RQ 1</strong></td>
</tr>
<tr>
<td>How much risk is associated with engagement in cyberbullying behaviors?</td>
</tr>
</tbody>
</table>
RQ 2 What factors examined in the current study, if any, are predictive of engagement in cyberbullying behaviors?

RQ 2.1 What relationship, if any, exists between gender and engagement in cyberbullying behaviors?

RQ 3 What relationship, if any, exists between gender and the range of cyberbullying behaviors engaged in?

RQ 3.1 Do normative beliefs regarding cyberbullying behaviors mediate the relationship between gender and range of cyberbullying behaviors for men?

RQ 3.2 Do perceptions of behavioral reinforcement mediate the relationship between gender and range of cyberbullying behaviors?

RQ 3.3 Do perceptions regarding the likelihood of social consequences mediate the relationship between gender and range of cyberbullying behaviors?

RQ 3.4 Do perceptions regarding the likelihood of institutional consequences mediate the relationship between gender and range of cyberbullying behaviors?

RQ 3.5 Does the perceived likelihood of confrontation mediate the relationship between gender and range of cyberbullying behaviors?

RQ 4 What relationship, if any, exists between the proposed distinguishing characteristics of cyberbullying and engagement in cyberbullying behaviors?

Hypothesis 1 It is expected that individuals who report high levels of support for COH norms will be more likely to engage in cyberbullying behaviors than individuals who report low levels of support for COH norms

Hypothesis 1a Men who endorse COH norms will be more likely to engage in cyberbullying behaviors than men who do not endorse COH norms
**Hypothesis 1b**
Women who endorse COH norms will be more likely to engage in cyberbullying behaviors than women who do not endorse COH norms.

**Hypothesis 2**
It is expected that individuals who report high levels of support for COH norms will be more likely to engage in a wider range of cyberbullying behaviors compared to individuals who report low levels of support for COH norms.

**Hypothesis 2a**
Men who endorse COH norms will engage in a wider range of cyberbullying behaviors compared to men who do not endorse COH norms.

**Hypothesis 2b**
Women who endorse COH norms will engage in a wider range of cyberbullying behaviors compared to women who do not endorse COH norms.

**Hypothesis 3**
Individuals who grew up in an area that has been classified as high COH in previous studies will report elevated COH norm acceptance on an individual measure of COH.

**Hypothesis 3a**
Men from a state typically identified as an honor state will endorse COH norms at a significantly higher rate than women from a state typically identified as an honor state.
Chapter VII: Study 1 Method

Participants / Procedure

Initial power analysis utilizing G*Power (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007) indicated that approximately 243 participants were needed to find a large effect size. Undergraduate and graduate students (N = 397; $M_{age} = 21.68$, $SE = .30$) at a Western university were recruited to participate in an online survey via the university’s SONA participation program. A majority of participants were women (n = 247, 62.2%) and one participant reported transgender status (Male to Female). This participant was reclassified as female (n = 248; 63.1%). The sample was split approximately equally between Conservatives (n = 114, 29.2%) and Liberals (n = 95, 24.3%), with almost one-quarter of respondents (n = 100, 25.6%) reporting an unsure/unknown political ideology. The remaining participants (n = 82, 21.0%) reported an Independent political ideology. The sample was predominantly heterosexual (n = 369, 94.6%), and White (n = 356, 89.7%) or Hispanic (n = 25, 6.3%). Complete demographics are presented in Table 7.1.

Table 7.1

Demographic Information - Full Sample

<table>
<thead>
<tr>
<th>Gender</th>
<th>N (%)</th>
<th>Ethnicity</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>145 (36.9%)</td>
<td>White (Non-Hispanic)</td>
<td>254 (65.3%)</td>
</tr>
<tr>
<td>Female</td>
<td>247 (62.8%)</td>
<td>African American</td>
<td>12 ( 3.1%)</td>
</tr>
<tr>
<td>Transgender (MtF)*</td>
<td>1 (.3%)</td>
<td>Hispanic</td>
<td>53 (13.6%)</td>
</tr>
<tr>
<td>Class</td>
<td></td>
<td>Asian American</td>
<td>26 ( 6.7%)</td>
</tr>
<tr>
<td>Category</td>
<td>Count (Percentage)</td>
<td>Category</td>
<td>Count (Percentage)</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------</td>
<td>-------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Freshman</td>
<td>75 (18.9%)</td>
<td>Pacific Islander</td>
<td>7 ( 1.8%)</td>
</tr>
<tr>
<td>Sophomore</td>
<td>39 ( 9.8%)</td>
<td>Other</td>
<td>7 ( 1.8%)</td>
</tr>
<tr>
<td>Junior</td>
<td>149 (37.5%)</td>
<td>Multi-Ethnic</td>
<td>30 ( 7.7%)</td>
</tr>
<tr>
<td>Senior</td>
<td>117 (29.5%)</td>
<td>Political Ideology</td>
<td></td>
</tr>
<tr>
<td>Graduate</td>
<td>12 ( 3.0%)</td>
<td>Republican</td>
<td>114 (29.2%)</td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td></td>
<td>Democrat</td>
<td>95 (24.3%)</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>369 (94.6%)</td>
<td>Independent</td>
<td>82 (21.0%)</td>
</tr>
<tr>
<td>LGB</td>
<td>17 ( 4.3%)</td>
<td>Unsure / Unknown</td>
<td>100 (25.6%)</td>
</tr>
<tr>
<td>Unsure / Unknown</td>
<td>4 ( 1.0%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Time Spent on Social Networking**

<table>
<thead>
<tr>
<th>Time Range</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 Hour</td>
<td>101 (25.9%)</td>
</tr>
<tr>
<td>1 – 3 Hours</td>
<td>208 (53.3%)</td>
</tr>
<tr>
<td>4 – 6 Hours</td>
<td>64 (16.4%)</td>
</tr>
<tr>
<td>&gt; 12 Hours</td>
<td>1 ( 0.3%)</td>
</tr>
</tbody>
</table>

**Time Spent Using Personal Technology**

<table>
<thead>
<tr>
<th>Time Range</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 Hour</td>
<td>21 ( 5.4%)</td>
</tr>
<tr>
<td>1 – 3 Hours</td>
<td>104 (26.7%)</td>
</tr>
<tr>
<td>4 – 6 Hours</td>
<td>154 (39.6%)</td>
</tr>
<tr>
<td>&gt; 12 Hours</td>
<td>12 ( 3.1%)</td>
</tr>
</tbody>
</table>

**Number of Social Networking Sites Used**

<table>
<thead>
<tr>
<th>Count Range</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 1</td>
<td>55 (13.9%)</td>
</tr>
<tr>
<td>4 – 5</td>
<td>174 (43.9%)</td>
</tr>
<tr>
<td>6+</td>
<td>6 ( 1.5%)</td>
</tr>
</tbody>
</table>

**Most Popular Social Networking Site Used**

<table>
<thead>
<tr>
<th>Site</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>332 (83.6%)</td>
</tr>
<tr>
<td>Snapchat</td>
<td>293 (73.8%)</td>
</tr>
<tr>
<td>Twitter</td>
<td>188 (47.4%)</td>
</tr>
</tbody>
</table>

*Note.* The male-to-female case was recoded as female for analysis purposes. Percent is out of total number who answered the question.
Materials

**Revised cyberbullying behavior questionnaire (RCBQ – B).** The Cyberbullying behavior questionnaire (CBQ-B) developed by Calvete et al. (2010) and modified by Gibb and Devereux (2014) was used in the current study. Response items for the original scale included three possibilities (Never, Sometimes, Often; Calvete et al., 2010). The current version included the modified response scale used in previous research (Never, Within my time at the university but not within the last year, Within the last year, Within the past 6 months, Within the past 3 months, Within the past month, Within the past week) used by Gibb and Devereux (2014) and was answered on a time scale from 0 (Never) to 6 (Within the past 1 week). These items were summed, such that higher values indicate engaging in cyberbullying behaviors more recently. Examples of behaviors asked about in the scale include sending repeated text messages that were threatening, recording a sexual act, or sending images of a target being hurt by others to someone who was not supposed to see them. An additional three items asked about forwarding material that could potentially be embarrassing for the subject, creating a scale that covered 20 behaviors. The modified scale’s reliability in the current study was acceptable (Cronbach’s α = .88).

**Revised CBQ-B follow up.** Participants who indicated that they had engaged in any of the behaviors were asked to complete behavior-specific follow-up questions. Specifically, participants were asked to report how many times they engaged in the behavior to establish the existence of a pattern of behavior (frequency). Participants were also asked to identify the level
of distress they intended to cause as well as the level of perceived distress experienced by the victim on a Likert-type scale ranging from 1 (No distress) to 7 (Extreme distress). Similar to Caravita et al. (2009) as well as others (de Bruyn et al., 2009; Parkhurst & Hopmeyer, 1998), questions regarding perceived differences in popularity, intelligence, and social network centrality were also asked. These questions asked the participant to compare themselves with the target on a 3-point Likert type scale: -1 (Less than me), 0 (About the same as me), 1 (More than me). Participants who completed these questions were also asked if they considered the target to be a part of their social circle. This question also included an option allowing participants to indicate they had targeted someone randomly. Participants were asked to estimate the likelihood of being confronted by the target of the behavior, the likelihood of experiencing social consequences, as well as the likelihood of experiencing institutional consequences as a result of the behavior. These questions were answered on a 7-point Likert type scale, from 1 (Not at all confident) to 7 (Very confident), with 4 (Moderately confident) as the midpoint. Finally, participants were asked to report on the actual experience of consequences, including confrontations by the target, social consequences, and institutional consequences.

**Revised cyberbullying victim questionnaire (RCBQ-V).** Participants completed the modified version of the original CBQ (Calvete et al., 2010) utilized by Gibb and Devereux (2014) to report cyberbullying behavior victimization. In this scale, the wording of the original CBQ items was modified to reflect experiencing the behavior instead of committing it. Examples include “I have had links of humiliating images of me sent to other people for them to see” and “Someone has recorded video or took pictures
by cell phone of me while a group laughed and forced me to do something humiliating or ridiculous”. The modified response options from the CBQ-B (Never, within my time at the university but not within the last year, within the last year, within the past 6 months, within the past 3 months, within the past month, within the past week; Gibb & Devereux, 2014) and the additional behavioral choices were included in this version as well. In the current study, Cronbach’s α = .89.

**Revised CBQ-V follow up.** Participants who reported that they were the victim of any of the behaviors were asked to complete behavior-specific follow-up questions similar to the behavior specific follow-up questions described above. Participants were asked to report the actual amount of distress they experienced, as well as the amount of distress they believed the perpetrator intended to cause. Similar to the follow-up questions for the bullying behaviors, participants were asked to report the degree of social connectedness between themselves and the perpetrator although these participants were also asked to report if they knew who committed the behavior. Participants were asked if they had confronted the perpetrator, their confidence that the confrontation would stop the behavior, if they had reported the behavior to someone else, and if they believed that reporting the behavior would stop the behavior.

**Attitudes toward cyberbullying.** To determine the individual level of normative beliefs regarding the use of technology to engage in aggressive behaviors, a scale developed by Barlett and Gentile (2012) was modified and used. The 9-item Attitudes Toward Cyberbullying was modified such that the term ‘cyberbullying’ was not included in the scale. This modification was done as previous research suggests that college students are aversive to the term ‘cyberbully’. The scale was answered on a 5-point Likert
type scale, from 1 (Strongly Agree) to 5 (Strongly Disagree). Sample items include “It is acceptable to send mean emails to others when they deserve it” and “Sometimes using passive aggressive methods of sending mean emails to others is the only way to get even”. Internal consistency for the scale was acceptable ($\alpha = .78$).

**Behavioral reinforcement scale.** To determine the individual level of perceived environmental support regarding the use of technology to engage in aggressive behaviors, the 12-item Reinforcement Questionnaire (Barlett & Gentile, 2012) was used. Similar to the normative belief scale, the behavioral reinforcement scale was modified to remove the term ‘cyberbullying’ from the questions. The scale was answered on a 7-point Likert type scale, from 1 (Not at all) to 7 (Extremely). Sample items include “My friends and I both get satisfaction from being mean to others online” and “My friends and I will often joke about some of the mean text messages that we sent to others”. Cronbach’s alpha for the current study was .89.

**Aggression questionnaire.** Participants were asked to complete the full aggression questionnaire developed by Buss and Perry (1992). This scale was used to measure an individual’s level of trait aggression and has four subscales (physical aggression, verbal aggression, anger, and hostility) as well as an overall score. The scale is answered on a 5-point Likert type scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Physical aggression subscale items include “Given enough provocation, I may hit someone” and “I have threatened people I know”. Verbal aggression items include “I tell my friends openly when I disagree with them” and “When people annoy me, I may tell them what I think of them”. The Anger subscale includes items such as “I flare up quickly but get over it quickly” and “Sometimes I fly off the handle for no good reason”.
The final subscale, Hostility, included items such as “I am sometimes eaten up with jealousy” and “I am suspicious of overly friendly strangers”. For the current study, Cronbach’s alpha was acceptable for the overall scale ($\alpha = .92$) as well as the subscales (Physical aggression $\alpha = .79$; Verbal $\alpha = .80$; Anger $\alpha = .82$; Hostility $\alpha = .88$).

**Short dark triad (SD3) – Machiavellianism scale.** Participants were asked to complete the measure included in the short measures of the Dark Triad personality traits (D. L. Paulhus & Jones, 2011). The Machiavellian personality trait scale was adapted from the Mach IV developed by Christie and Geis (1970). The scale is answered on a 5-point Likert type scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Sample items include “It’s not wise to tell your secrets” and “You should wait for the right time to get back at people”. In the current study, Cronbach’s alpha was .85.

**Short dark triad (SD3) – subclinical psychopathy scale.** Participants completed the sub-clinical psychopathy subscale of the SD3 which was adapted from the SRP – III D. L. Paulhus, Neumann, and Hare (in press). The scale is answered on a 5-point Likert type scale from 1 (Disagree Strongly) to 5 (Agree Strongly). Sample items include “I like to get revenge on authorities” and “People who mess with me always regret it”. In the current study, Cronbach’s alpha was .72.

**Comprehensive assessment of sadistic tendencies.** Sadism was assessed using two scales. First, the Comprehensive Assessment of Sadistic Tendencies (Buckels, Jones, & Paulhus, 2013b; Buckels & Paulhus, 2014) was used. Items were responded to on a 5-point Likert type scale from 1 (Disagree Strongly) to 5 (Agree Strongly). Examples of items include “I was purposefully mean to some people in high school” (Direct Verbal), and “I enjoy tormenting people” (Direct Physical). The overall scale’s alpha was
acceptable (.91) as were the subscales (Direct Physical Sadism $\alpha = .89$; Direct Verbal Sadism $\alpha = .77$; Vicarious Sadism $\alpha = .78$).

**Short sadistic impulse scale.** The second scale that was utilized is the Short Sadistic Impulse Scale (O’Meara et al., 2011). This scale was used to assess the dispositional tendency to enjoy causing harm to others. This scale is answered on a 2-point scale ($0 - Not Like Me$) to ($1 - Like me$). Examples include “I enjoy seeing people hurt” and “I have hurt people for my own enjoyment”. Mean scores were computed following the instructions of Buckels et al. (2013b). Initial Cronbach’s $\alpha = .26$. Item analysis indicated that the reverse coded item (I wouldn’t intentionally hurt anyone) did not fit in the scale. After the item was removed, Cronbach’s $\alpha = .48$.

**Honor concerns scale.** To measure culture of honor norms within the population, participants completed four different scales. The first honor norm scale participants completed was the Honor Concerns scale (Ijzerman, van Dijk, & Gallucci, 2007). Items in the scale were answered using a 9-point Likert-type scale from $1$ (Strongly Disagree) to $9$ (Strongly Agree). Mean scores were computed following the instructions of Ijzerman et al. (2007). Examples of scale items are “My honor depends on the appreciation and respect others have for me” and “My honor is the basis for my self-respect”. An acceptable alpha level ($\alpha = .88$) was observed in the current study.

**Honor ideology of womanhood.** The next scale used was the honor ideology of women scale (Barnes, Brown, Lenes, Bosson, & Carvallo, 2014). Scale items were answered on a 9-point Likert-type scale from $1$ (Strongly Disagree) to $9$ (Strongly Agree) and included items such as ‘A respectable woman avoids any behavior that might bring
shame on her family’ and ‘A good woman never tolerates disrespect’. The scale had an acceptable alpha in the current study ($\alpha = .92$).

**Honor ideology for manhood.** Participants also completed the honor ideology for men scale (Barnes, Brown, & Osterman, 2012). Similar to the honor ideology of womanhood scale described above, this 16-item scale was answered on a 9-point Likert type scale from 1 (Strongly Disagree) to 9 (Strongly Agree). Examples of scale items included “A real man will never back down from a fight” and “A real man never leaves a score unsettled”. The scale had acceptable levels of reliability (Cronbach’s $\alpha = .96$) in the current study.

**Culture of honor questionnaire.** Three items used by Henry (2009) were added. These items were added to more directly tap the concept of honor norms. The first item read, “If someone insults me, it may happen that I beat him/her up”. The second item read, “My honor is worth defending, even aggressively.” The third read, “If someone insults or disrespects me, they will pay.” Statements are rated on a 6-point Likert type scale from 1 (Strongly disagree) to 6 (Strongly agree). The reported Cronbach’s alpha was acceptable for both the original ($\alpha = .85$) and current study ($\alpha = .84$).
Chapter VIII: Study 1 Results

Summary Statistics

The current study altered the instrument used to determine cyberbully status, inquiring about four additional behaviors not included in the original measure. It is possible that these behaviors may have inflated the observed prevalence of cyberbullying. All analyses utilize the standard $p < .05$ significance convention unless otherwise noted. Marginal significance was indicated by $p < .10$. Overall, the observed rates of cyberbullying behavior or mean number of different behaviors were similar between the two measures (Table 8.1), so the revised version of the CBQ was utilized in all analyses.

Table 8.1

*Percentage Reporting Cyberbully Status on Revised CBQ-B Compared to Original CBQ-B.*

<table>
<thead>
<tr>
<th>Status</th>
<th>Revised CBQ-B</th>
<th>Original CBQ-B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perpetrator</td>
<td>197 (49.6%)</td>
<td>190 (47.9%)</td>
</tr>
<tr>
<td>Victim</td>
<td>206 (51.9%)</td>
<td>198 (49.9%)</td>
</tr>
<tr>
<td>Neither Perpetrator or Victim</td>
<td>147 (37.0%)</td>
<td>151 (38.0%)</td>
</tr>
</tbody>
</table>

Range of Behaviors Reported by Perpetrator

| Mean Number of Behaviors | Revised CBQ-B | 3.45 (3.56) | Original CBQ-B | 2.89 (2.85) |
| Percent Reporting Max Range ofBehaviors | 3 (0.8%) | 3 (0.8%) |

Range of Behaviors Reported by Target

| Mean Number of Behaviors | Revised CBQ-B | 4.35 (3.92) | Original CBQ-B | 3.85 (3.33) |
| Percent Reporting Max Range ofBehaviors | 5 (2.4%) | 5 (2.4%) |
Behaviors

*Note.* The maximum number of behaviors possible for the Revised CBQ-B is 20. The maximum number of behaviors possible for the Original CBQ-B is 16.

Approximately 50% (n = 197) of participants reported perpetrating at least one cyberbullying behavior (CBB) with a similar percentage (n = 206, 51.9%) reporting being the target of the measured behaviors. A smaller percentage (n = 147, 37.0%) of the sample reported neither being the target of nor perpetrating any of the behaviors listed in the expanded CBQ-B. As before, over a quarter (n = 153, 38.5%) of individuals who reported being involved with cyberbullying behaviors listed reported both engaging in and being the target of at least one of the behaviors.

A restricted sample was also developed that excluded the 75 freshmen as one of the questions asked about behaviors engaged in “within the past year”, a time period that included time during high-school for these participants. Approximately 60% (n =203) of the restricted sample reported perpetrating or being the victim of at least one of the cyberbullying behaviors. Only a small percentage (n = 114, 36.0%) of this sample reported neither being the target of nor perpetrating any of the behaviors listed on the expanded CBQ-B. As before, a majority (n = 127, 40.1%) of participants reported both perpetrating and being the victim of these behaviors, with only 12% (n = 38) of participants reporting *only* perpetrating or being the victim of the measured behaviors (Table 8.2). As there were no unexpected differences in demographics or prevalence between the full and reduced sample, the full sample was used in all subsequent analyses.
Table 8.2

*Comparison of Demographic Factors Between Freshmen and Other Classes*

<table>
<thead>
<tr>
<th></th>
<th>Freshman</th>
<th>Other</th>
<th>Freshman</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Classes</td>
<td>Classes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong>*</td>
<td>18.23 (.69)</td>
<td>22.55 (6.09)</td>
<td>Political Ideology</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td>Republican</td>
<td>16 (21.3%)</td>
</tr>
<tr>
<td>Male</td>
<td>24 (32.0%)</td>
<td>121 (38.2%)</td>
<td>Democrat</td>
<td>19 (25.3%)</td>
</tr>
<tr>
<td>Female</td>
<td>51 (68.0%)</td>
<td>196 (61.8%)</td>
<td>Independent</td>
<td>15 (20.0%)</td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td></td>
<td></td>
<td>Unsure / Unknown</td>
<td>25 (33.3%)</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>72 (98.6%)</td>
<td>297 (93.7%)</td>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>LGB</td>
<td>1 ( 1.4%)</td>
<td>14 ( 4.0%)</td>
<td>Non-Hispanic White</td>
<td>45 (60.0%)</td>
</tr>
<tr>
<td>Unsure / Unknown</td>
<td>0 ( 0.0%)</td>
<td>4 ( 1.3%)</td>
<td>Black</td>
<td>5 ( 6.7%)</td>
</tr>
<tr>
<td>Cyberbully Status</td>
<td></td>
<td></td>
<td>Hispanic</td>
<td>7 ( 9.3%)</td>
</tr>
<tr>
<td>Perpetrator Only</td>
<td>5 ( 6.7%)</td>
<td>38 (12.0%)</td>
<td>Asian American</td>
<td>7 ( 9.3%)</td>
</tr>
<tr>
<td>Victim Only</td>
<td>13 (17.3%)</td>
<td>38 (12.0%)</td>
<td>Pacific Islander</td>
<td>1 ( 1.3%)</td>
</tr>
<tr>
<td>Perpetrator / Victim</td>
<td>25 (33.3%)</td>
<td>127 (40.1%)</td>
<td>Multiple Reported</td>
<td>9 (12.0%)</td>
</tr>
<tr>
<td>Neither</td>
<td>32 (42.7%)</td>
<td>114 (36.0%)</td>
<td>Other</td>
<td>1 ( 1.3%)</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.

To determine if CBBs were engaged in at a non-zero rate, frequency of perpetration and experience were entered into a one sample t-test comparing the means to 0. Similarly, distress scores were compared to 1 (*no distress*). Mean scores for the three measures of power (popularity, centrality within social network, and intelligence) were also examined to determine if there was a perceived power differential between perpetrators and targets. For measures of popularity, centrality, and intelligence, mean scores significantly higher than 0 indicate a belief that the participant was *more* popular,
central, and/or intelligent than the target whereas scores significantly lower than 0 indicate a general belief that the participant was less popular, central, and/or intelligent. As multiple t-tests were conducted, alpha was set to .01 using a Bonferroni correction. The t-tests were computed using the bootstrap feature of SPSS with 1000 resamples. Bias-corrected 95% confidence intervals for all analyses are reported. Overall, perpetrators reported engaging in CBBs at a non-zero rate, and reported both intending to cause and believing they had caused a low level of distress to their target. Perpetrators reported perceiving their targets as similar in popularity. However, they reported being more intelligent and more central to their social circles than their targets (Table 8.3). Across all behaviors only a small percentage of behaviors (1.9%) were reportedly targeted towards a random person, with approximately half of behaviors (50.5%) targeted against someone in the perpetrator’s social circle (see Table 8.5).

Table 8.3

*Mean Perpetrator Reported Frequency, Intentionality, and Power Imbalance Items*

<table>
<thead>
<tr>
<th></th>
<th>Lower 95% CI</th>
<th>Mean</th>
<th>Upper 95% CI</th>
<th>t(171)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency***</td>
<td>20.01</td>
<td>30.40</td>
<td>43.28</td>
<td>22.12</td>
</tr>
<tr>
<td>Intended Distress***</td>
<td>1.65</td>
<td>1.82</td>
<td>1.98</td>
<td>8.53</td>
</tr>
<tr>
<td>Perceived Caused Distress***</td>
<td>2.14</td>
<td>2.33</td>
<td>2.53</td>
<td>12.64</td>
</tr>
<tr>
<td>Popularity</td>
<td>-.05</td>
<td>.19</td>
<td>.41</td>
<td>1.54</td>
</tr>
<tr>
<td>Intelligence**</td>
<td>.14</td>
<td>.40</td>
<td>.63</td>
<td>2.99</td>
</tr>
<tr>
<td>Centrality**</td>
<td>.14</td>
<td>.33</td>
<td>.54</td>
<td>3.02</td>
</tr>
<tr>
<td>Mean Confidence of Not Being Confronted</td>
<td>4.44</td>
<td>4.73</td>
<td>5.00</td>
<td>26.10</td>
</tr>
<tr>
<td>Behavior</td>
<td>Male (n = 83)</td>
<td>Female (n = 112)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>---------------</td>
<td>-----------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Jokes</td>
<td>29</td>
<td>34.9%</td>
<td>33</td>
<td>29.5%</td>
</tr>
<tr>
<td>Threat by Email</td>
<td>6</td>
<td>7.2%</td>
<td>5</td>
<td>4.5%</td>
</tr>
<tr>
<td>Threat by Text</td>
<td>26</td>
<td>31.3%</td>
<td>35</td>
<td>31.3%</td>
</tr>
<tr>
<td>Post Humiliating Images</td>
<td>12</td>
<td>14.4%</td>
<td>10</td>
<td>8.9%</td>
</tr>
<tr>
<td>Sent Links of Humiliating Images</td>
<td>20</td>
<td>24.1%</td>
<td>21</td>
<td>18.8%</td>
</tr>
<tr>
<td>Sent Links to Rumors/Gossip</td>
<td>16</td>
<td>19.3%</td>
<td>35</td>
<td>31.3%</td>
</tr>
<tr>
<td>Hacked Email</td>
<td>7</td>
<td>8.4%</td>
<td>2</td>
<td>18.0%</td>
</tr>
<tr>
<td>Hacked Social Media Account</td>
<td>17</td>
<td>20.5%</td>
<td>5</td>
<td>4.5%</td>
</tr>
<tr>
<td>Recorded Video: Humiliation</td>
<td>28</td>
<td>33.7%</td>
<td>12</td>
<td>10.7%</td>
</tr>
<tr>
<td>Sent Video: Humiliation</td>
<td>27</td>
<td>32.5%</td>
<td>26</td>
<td>23.2%</td>
</tr>
<tr>
<td>Fwd Video: Humiliation</td>
<td>30</td>
<td>36.1%</td>
<td>38</td>
<td>33.9%</td>
</tr>
<tr>
<td>Recorded Video: Hurt</td>
<td>14</td>
<td>16.9%</td>
<td>5</td>
<td>4.5%</td>
</tr>
<tr>
<td>Sent Video: Hurt</td>
<td>7</td>
<td>8.4%</td>
<td>4</td>
<td>3.6%</td>
</tr>
<tr>
<td>Fwd Video: Hurt</td>
<td>14</td>
<td>16.9%</td>
<td>8</td>
<td>7.1%</td>
</tr>
<tr>
<td>Posted secrets</td>
<td>7</td>
<td>8.4%</td>
<td>7</td>
<td>6.3%</td>
</tr>
<tr>
<td>Deliberately Excluded from Group</td>
<td>40</td>
<td>48.2%</td>
<td>54</td>
<td>48.2%</td>
</tr>
<tr>
<td>Sent Repeated Messages Meant to be</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threatening</td>
<td>8</td>
<td>9.6%</td>
<td>21</td>
<td>18.8%</td>
</tr>
</tbody>
</table>
Table 8.5

Perpetrators' Report of Whether Target is in Social Circle by Cyberbully Behavior

<table>
<thead>
<tr>
<th>Behavior</th>
<th>N</th>
<th>%Yes</th>
<th>%No</th>
<th>%Random</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jokes</td>
<td>62</td>
<td>62.9%</td>
<td>35.5%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Threat by Email</td>
<td>11</td>
<td>27.3%</td>
<td>63.6%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Threat by Text</td>
<td>61</td>
<td>49.2%</td>
<td>47.5%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Post Humiliating Images</td>
<td>23</td>
<td>65.2%</td>
<td>30.4%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Sent Links of Humiliating Images</td>
<td>42</td>
<td>50.0%</td>
<td>47.6%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Sent Links to Rumors/Gossip</td>
<td>52</td>
<td>44.2%</td>
<td>55.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Hacked Email</td>
<td>9</td>
<td>33.3%</td>
<td>66.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Hacked Social Media Account</td>
<td>23</td>
<td>82.6%</td>
<td>17.4%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Recorded Video: Humiliation</td>
<td>41</td>
<td>80.5%</td>
<td>19.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Video: Humiliation</td>
<td>52</td>
<td>61.5%</td>
<td>38.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Forward Video: Humiliation</td>
<td>69</td>
<td>50.7%</td>
<td>46.4%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Recorded Video: Hurt</td>
<td>18</td>
<td>44.4%</td>
<td>55.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Video: Hurt</td>
<td>10</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Forward Video: Hurt</td>
<td>21</td>
<td>28.6%</td>
<td>66.7%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Posted secrets</td>
<td>13</td>
<td>38.5%</td>
<td>61.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Deliberately Excluded from Group</td>
<td>93</td>
<td>34.4%</td>
<td>63.4%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Sent Repeated Messages Meant to be Threatening</td>
<td>28</td>
<td>42.9%</td>
<td>53.6%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Recorded Video: Sex</td>
<td>17</td>
<td>58.8%</td>
<td>41.2%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Note. Perpetrators could report engaging in multiple behaviors.
Sent Video: Sex  8  50.0%  50.0%  0.0%
Forward Video: Sex  16  25.0%  68.8%  6.3%
Weighted Average of Responses  50.5%  47.5%  1.9%

*Note.* Perpetrators' could report multiple behaviors.

Similar to perpetrators, victims reported experiencing behaviors at a non-zero rate. Victims believed that perpetrators *intended* to cause a significant amount of distress, and reported *experiencing* a non-zero amount of distress. Victims did not perceive themselves as differing in overall popularity or centrality to their social networks, but did report believing themselves to be more intelligent (Table 8.6). Targets were moderately confident ($M_{Confidence} = 4.78, SE = .13$) that they knew who the perpetrator was. Similar to perpetration rates, only a small percentage (6.7%) of behaviors were believed to be targeted randomly, with a majority (57.4%) of behaviors believed to be perpetrated by someone within the victim’s social network (see Table 8.7).

Table 8.6

*Mean Victim Reported Repetition, Intentionality, and Power Imbalance Items*

<table>
<thead>
<tr>
<th></th>
<th>Lower 95% CI</th>
<th>Mean</th>
<th>Upper 95% CI</th>
<th>t (168)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency***</td>
<td>19.37</td>
<td>30.11 (71.51)</td>
<td>41.19</td>
<td>5.47</td>
</tr>
<tr>
<td>Perceived Intended</td>
<td>2.73</td>
<td>2.97 (1.65)</td>
<td>3.20</td>
<td>15.49</td>
</tr>
<tr>
<td>Distress***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual Experienced</td>
<td>2.55</td>
<td>2.73 (1.51)</td>
<td>2.98</td>
<td>15.14</td>
</tr>
<tr>
<td>Popularity</td>
<td>-.25</td>
<td>.06 (2.10)</td>
<td>.36</td>
<td>.37</td>
</tr>
<tr>
<td>Intelligence**</td>
<td>.34</td>
<td>.67 (2.19)</td>
<td>1.01</td>
<td>4.01</td>
</tr>
<tr>
<td>Centrality</td>
<td>-.14</td>
<td>.15 (2.00)</td>
<td>.43</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Note. Means for frequency, popularity, intelligence and centrality tested against 0. Means for perceived intended distress and actual experienced distress tested against 1. *p < .05. **p < .01. ***p < .001.

Table 8.7

*Percentage of Each Gender Reporting Victimization by Behavior*

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Male (n = 73)</th>
<th>Female (n = 129)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Jokes</td>
<td>41</td>
<td>56.2</td>
</tr>
<tr>
<td>Threat by Email</td>
<td>11</td>
<td>15.1</td>
</tr>
<tr>
<td>Threat by Text</td>
<td>27</td>
<td>37.0</td>
</tr>
<tr>
<td>Post Humiliating Images</td>
<td>20</td>
<td>27.4</td>
</tr>
<tr>
<td>Sent Links of Humiliating Images</td>
<td>20</td>
<td>27.4</td>
</tr>
<tr>
<td>Sent Links to Rumors/Gossip</td>
<td>23</td>
<td>31.5</td>
</tr>
<tr>
<td>Hacked Email</td>
<td>7</td>
<td>9.6</td>
</tr>
<tr>
<td>Hacked Social Media Account</td>
<td>19</td>
<td>26.0</td>
</tr>
<tr>
<td>Recorded Video: Humiliation</td>
<td>34</td>
<td>46.6</td>
</tr>
<tr>
<td>Sent Video: Humiliation</td>
<td>21</td>
<td>28.8</td>
</tr>
<tr>
<td>Fwd Video: Humiliation</td>
<td>17</td>
<td>23.3</td>
</tr>
<tr>
<td>Recorded Video: Hurt</td>
<td>9</td>
<td>12.3</td>
</tr>
<tr>
<td>Sent Video: Hurt</td>
<td>4</td>
<td>5.5</td>
</tr>
<tr>
<td>Fwd Video: Hurt</td>
<td>5</td>
<td>6.8</td>
</tr>
<tr>
<td>Posted secrets</td>
<td>13</td>
<td>17.8</td>
</tr>
<tr>
<td>Deliberately Excluded from Group</td>
<td>24</td>
<td>32.9</td>
</tr>
<tr>
<td>Sent Repeated Messages Meant to be Threatening</td>
<td>15</td>
<td>20.5</td>
</tr>
<tr>
<td>Recorded Video: Sex</td>
<td>6</td>
<td>8.2</td>
</tr>
<tr>
<td>Sent Video: Sex</td>
<td>4</td>
<td>5.5</td>
</tr>
<tr>
<td>Fwd Video: Sex</td>
<td>3</td>
<td>4.1</td>
</tr>
</tbody>
</table>
Note. Victims could report being the target of multiple behaviors.

Table 8.8

*Victims Report of Whether Perpetrator is in Social Circle by Behavior*

<table>
<thead>
<tr>
<th>Behavior</th>
<th>N</th>
<th>%Yes</th>
<th>%No</th>
<th>%Random</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jokes</td>
<td>113</td>
<td>63.7%</td>
<td>31.0%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Threat by Email</td>
<td>29</td>
<td>41.4%</td>
<td>37.9%</td>
<td>20.7%</td>
</tr>
<tr>
<td>Threat by Text</td>
<td>75</td>
<td>58.7%</td>
<td>38.7%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Post Humiliating Images</td>
<td>59</td>
<td>66.1%</td>
<td>25.4%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Sent Links of Humiliating Images</td>
<td>42</td>
<td>57.1%</td>
<td>33.3%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Sent Links to Rumors/Gossip</td>
<td>48</td>
<td>56.3%</td>
<td>41.7%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Hacked Email</td>
<td>16</td>
<td>25.0%</td>
<td>43.8%</td>
<td>31.3%</td>
</tr>
<tr>
<td>Hacked Social Media Account</td>
<td>36</td>
<td>55.6%</td>
<td>33.3%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Recorded Video: Humiliation</td>
<td>81</td>
<td>69.1%</td>
<td>24.7%</td>
<td>6.2%</td>
</tr>
<tr>
<td>Sent Video: Humiliation</td>
<td>44</td>
<td>63.6%</td>
<td>31.8%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Forward Video: Humiliation</td>
<td>31</td>
<td>54.8%</td>
<td>41.9%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Recorded Video: Hurt</td>
<td>15</td>
<td>40.0%</td>
<td>46.7%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Sent Video: Hurt</td>
<td>10</td>
<td>20.0%</td>
<td>70.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Forward Video: Hurt</td>
<td>9</td>
<td>11.1%</td>
<td>88.9%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Posted secrets</td>
<td>36</td>
<td>41.7%</td>
<td>50.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Deliberately Excluded from Group</td>
<td>76</td>
<td>67.1%</td>
<td>28.9%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Sent Repeated Messages Meant to be</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threatening</td>
<td>45</td>
<td>51.1%</td>
<td>40.0%</td>
<td>8.9%</td>
</tr>
<tr>
<td>Recorded Video: Sex</td>
<td>23</td>
<td>60.9%</td>
<td>39.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Video: Sex</td>
<td>10</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Forward Video: Sex</td>
<td>9</td>
<td>44.4%</td>
<td>55.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Weighted Average of Responses</td>
<td></td>
<td>57.4%</td>
<td>35.9%</td>
<td>6.7%</td>
</tr>
</tbody>
</table>
Note. Victims’ could report multiple behaviors.

RQ 1: How much risk is associated with engagement in cyberbullying behaviors? To examine the perception of risk associated with engagement in cyberbullying behaviors (RQ1), mean scores for three different risk areas were examined. First, the mean score for how confident the perpetrator was that he/she would not be confronted by the target was meaned across all reported behaviors. Overall, perpetrators (n = 195) reported that they were moderately confident (M = 4.64, SE = .14) that they would not be confronted by the target. This confidence was reflected in actual rates of experienced confrontation, with only 32% (n = 62) of participants reporting that they had experienced a confrontation face-to-face, and a similar number (n = 74, 38.1%) reporting some kind of confrontation by technology. Of note, participants who sent repeated messages meant to be threatening (46.4%) and threatening emails (45.5%) were the most likely to be confronted face-to-face (see Table 8.9). Participants who sent repeated texts meant to be threatening (44.4%), who sent threatening images by email (45.5%) or sent threatening images by text (54.1%; see Table 8.10) were the most likely to be confronted via some form of technology.

Table 8.9

<table>
<thead>
<tr>
<th>Behavior</th>
<th>N</th>
<th>%Yes</th>
<th>%No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jokes</td>
<td>62</td>
<td>24.2%</td>
<td>75.8%</td>
</tr>
<tr>
<td>Threat by Email</td>
<td>11</td>
<td>45.5%</td>
<td>54.5%</td>
</tr>
<tr>
<td>Threat by Text</td>
<td>61</td>
<td>34.4%</td>
<td>65.6%</td>
</tr>
</tbody>
</table>
Post Humiliating Images 23 39.1% 60.9%
Sent Links of Humiliating Images 42 9.5% 90.5%
Sent Links to Rumors/Gossip 52 13.5% 86.5%
Hacked Email 9 33.3% 66.7%
Hacked Social Media Account 23 34.8% 65.2%
Recorded Video: Humiliation 41 17.1% 82.9%
Sent Video: Humiliation 51 13.7% 86.3%
Forward Video: Humiliation 68 11.8% 88.2%
Recorded Video: Hurt 18 22.2% 77.8%
Sent Video: Hurt 10 10.0% 90.0%
Forward Video: Hurt 22 4.5% 95.5%
Posted secrets 13 7.7% 92.3%
Deliberately Excluded from Group 93 8.6% 91.4%
Sent Repeated Messages Meant to be Threatening 28 46.4% 53.6%
Recorded Video: Sex 17 11.8% 88.2%
Sent Video: Sex 8 0.0% 100.0%
Forward Video: Sex 16 0.0% 100.0%

Weighted Average of Responses 18.6% 81.4%

*Note.* Perpetrators could report multiple behaviors.

**Table 8.10**

*Percentage of Perpetrators Reporting Being Confronted via Technology by Cyberbully*

<table>
<thead>
<tr>
<th>Behavior</th>
<th>N</th>
<th>%Yes</th>
<th>%No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jokes</td>
<td>62</td>
<td>29.0%</td>
<td>71.0%</td>
</tr>
<tr>
<td>Threat by Email</td>
<td>11</td>
<td>45.5%</td>
<td>54.5%</td>
</tr>
<tr>
<td>Threat by Text</td>
<td>61</td>
<td>54.1%</td>
<td>45.9%</td>
</tr>
</tbody>
</table>
Post Humiliating Images   23   26.1%   73.9%
Sent Links of Humiliating Images   42   9.5%   90.5%
Sent Links to Rumors/Gossip   50   10.0%   90.0%
Hacked Email   9   11.1%   88.9%
Hacked Social Media Account   23   34.8%   65.2%
Recorded Video: Humiliation   41   12.2%   87.8%
Sent Video: Humiliation   51   9.8%   90.2%
Forward Video: Humiliation   67   10.4%   89.6%
Recorded Video: Hurt   18   0.0%   100.0%
Sent Video: Hurt   10   10.0%   90.0%
Forward Video: Hurt   22   4.5%   95.5%
Posted secrets   13   7.7%   92.3%
Deliberately Excluded from Group   92   17.4%   82.6%
Sent Repeated Messages Meant to be Threatening   27   44.4%   55.6%
Recorded Video: Sex   17   11.8%   88.2%
Sent Video: Sex   8   12.5%   87.5%
Forward Video: Sex   16   12.5%   87.5%
Weighted Average of Responses   20.1%   79.9%

Note. Perpetrators could report multiple behaviors.

Perpetrators were moderately confident that they would not experience social ($M = 5.17, SE = .14$) or institutional ($M = 5.63, SE = .13$) consequences. The reported rates of actual experienced consequences suggest that this belief was not unfounded. The highest rate of reported negative consequences was for those participants who reported sending threatening messages by text (54.1%) or sent repeated messages meant to be threatening (44.4%; see Table 8.11). Overall, results suggest that individuals who engage in cyberbullying behaviors are fairly confident they will not be confronted by the target
and will not experience negative consequences either socially or from institutions. This expectation is largely confirmed in reports of confrontations (Table 8.9 and Table 8.10) and reports of experiencing consequences (Table 8.11).

Table 8.11

*Percentage of Perpetrators Reporting Experiencing Any Consequence by Cyberbully Behavior*

<table>
<thead>
<tr>
<th>Behavior</th>
<th>N</th>
<th>%Yes</th>
<th>%No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jokes</td>
<td>62</td>
<td>29.0%</td>
<td>71.0%</td>
</tr>
<tr>
<td>Threat by Email</td>
<td>11</td>
<td>45.5%</td>
<td>54.5%</td>
</tr>
<tr>
<td>Threat by Text</td>
<td>61</td>
<td>54.1%</td>
<td>45.9%</td>
</tr>
<tr>
<td>Post Humiliating Images</td>
<td>23</td>
<td>26.1%</td>
<td>73.9%</td>
</tr>
<tr>
<td>Sent Links of Humiliating Images</td>
<td>42</td>
<td>9.5%</td>
<td>90.5%</td>
</tr>
<tr>
<td>Sent Links to Rumors/Gossip</td>
<td>50</td>
<td>10.0%</td>
<td>90.0%</td>
</tr>
<tr>
<td>Hacked Email</td>
<td>9</td>
<td>11.1%</td>
<td>88.9%</td>
</tr>
<tr>
<td>Hacked Social Media Account</td>
<td>23</td>
<td>34.8%</td>
<td>65.2%</td>
</tr>
<tr>
<td>Recorded Video: Humiliation</td>
<td>41</td>
<td>12.2%</td>
<td>87.8%</td>
</tr>
<tr>
<td>Sent Video: Humiliation</td>
<td>51</td>
<td>9.8%</td>
<td>90.2%</td>
</tr>
<tr>
<td>Forward Video: Humiliation</td>
<td>67</td>
<td>10.4%</td>
<td>89.6%</td>
</tr>
<tr>
<td>Recorded Video: Hurt</td>
<td>18</td>
<td>0.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Sent Video: Hurt</td>
<td>10</td>
<td>10.0%</td>
<td>90.0%</td>
</tr>
<tr>
<td>Forward Video: Hurt</td>
<td>22</td>
<td>4.5%</td>
<td>95.5%</td>
</tr>
<tr>
<td>Posted secrets</td>
<td>13</td>
<td>7.7%</td>
<td>92.3%</td>
</tr>
<tr>
<td>Deliberately Excluded from Group</td>
<td>92</td>
<td>17.4%</td>
<td>82.6%</td>
</tr>
<tr>
<td>Sent Repeated Messages Meant to be Threatening</td>
<td>27</td>
<td>44.4%</td>
<td>55.6%</td>
</tr>
<tr>
<td>Recorded Video: Sex</td>
<td>17</td>
<td>11.8%</td>
<td>88.2%</td>
</tr>
<tr>
<td>Sent Video: Sex</td>
<td>8</td>
<td>12.5%</td>
<td>87.5%</td>
</tr>
</tbody>
</table>
Note. Perpetrators could report multiple behaviors.

These results can be compared to the reported rates of confrontation by the victim. Victims were asked to report their confidence that engaging with the perpetrator would stop the behavior. Overall, victims reported a moderate amount of confidence ($M = 4.05; SE = .13$) that confronting the perpetrator would stop the behavior. Victims reported a lower amount of confidence ($M = 3.52, SE = .13$) that reporting the behavior to someone else would stop it and this lower confidence is reflected in the low rates at which victims reported the behavior to others (Table 8.12). Overall, approximately half of victims reported confronting their attacker either face-to-face ($n = 102, 52.8\%$) or via some form of technology ($n = 95, 48.7\%$), although the behavior-specific rates varied more widely for both face-to-face (Table 8.13) and technology (Table 8.14) confrontations.

Table 8.12

<p>| Percentage of Victims Reporting Perpetrator to Someone Else by Cyberbully Behavior |
|-----------------------------------------------|----------------|----------------|----------------|
|                                               | N   | %Yes | %No | % Don’t Know the Perpetrator |
| Jokes                                         | 113 | 7.1% | 85.0% | 8.0% |
| Threat by Email                               | 29  | 10.3% | 69.0% | 20.7% |
| Threat by Text                                | 73  | 16.4% | 78.1% | 5.5% |
| Post Humiliating Images                       | 59  | 5.1% | 93.2% | 1.7% |
| Sent Links of Humiliating Images              | 42  | 2.4% | 90.5% | 7.1% |
| Sent Links to Rumors/Gossip                   | 49  | 4.1% | 89.8% | 6.1% |</p>
<table>
<thead>
<tr>
<th>Cyberbully Behavior</th>
<th>N</th>
<th>%Yes</th>
<th>%No</th>
<th>% I Don’t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jokes</td>
<td>113</td>
<td>30.1%</td>
<td>60.2%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Threat by Email</td>
<td>29</td>
<td>17.2%</td>
<td>0.0%</td>
<td>82.8%</td>
</tr>
<tr>
<td>Threat by Text</td>
<td>75</td>
<td>38.7%</td>
<td>53.3%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Post Humiliating Images</td>
<td>59</td>
<td>39.0%</td>
<td>55.9%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Behavior</td>
<td>N</td>
<td>%Yes</td>
<td>%No</td>
<td>%I Don’t</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----</td>
<td>------</td>
<td>------</td>
<td>----------</td>
</tr>
<tr>
<td>Sent Links of Humiliating Images</td>
<td>42</td>
<td>28.6%</td>
<td>61.9%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Sent Links to Rumors/Gossip</td>
<td>49</td>
<td>18.4%</td>
<td>71.4%</td>
<td>10.2%</td>
</tr>
<tr>
<td>Hacked Email</td>
<td>16</td>
<td>12.5%</td>
<td>62.5%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Hacked Social Media Account</td>
<td>36</td>
<td>36.1%</td>
<td>44.4%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Recorded Video: Humiliation</td>
<td>81</td>
<td>40.7%</td>
<td>54.3%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Sent Video: Humiliation</td>
<td>44</td>
<td>29.5%</td>
<td>65.9%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Forward Video: Humiliation</td>
<td>31</td>
<td>19.4%</td>
<td>74.2%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Recorded Video: Hurt</td>
<td>14</td>
<td>14.3%</td>
<td>71.4%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Sent Video: Hurt</td>
<td>10</td>
<td>10.0%</td>
<td>80.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Forward Video: Hurt</td>
<td>9</td>
<td>22.2%</td>
<td>77.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Posted secrets</td>
<td>35</td>
<td>17.1%</td>
<td>71.4%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Deliberately Excluded from Group</td>
<td>76</td>
<td>13.2%</td>
<td>86.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Repeated Messages Meant to be Threatening</td>
<td>46</td>
<td>41.3%</td>
<td>50.0%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Recorded Video: Sex</td>
<td>24</td>
<td>25.0%</td>
<td>75.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Video: Sex</td>
<td>11</td>
<td>36.4%</td>
<td>63.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Forward Video: Sex</td>
<td>9</td>
<td>44.4%</td>
<td>55.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Weighted Average</td>
<td></td>
<td>28.8%</td>
<td>61.0%</td>
<td>10.3%</td>
</tr>
</tbody>
</table>

*Note.* Victims could report multiple behaviors.

Table 8.14

Percentage of Victims Reporting Confronting the Perpetrator via Technology by Cyberbully Behavior

<table>
<thead>
<tr>
<th>N</th>
<th>%Yes</th>
<th>%No</th>
<th>%I Don’t</th>
<th>Know the Perpetrator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jokes</td>
<td>101</td>
<td>30.7%</td>
<td>69.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Threat by Email</td>
<td>22</td>
<td>40.9%</td>
<td>59.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Behavior</td>
<td>Count</td>
<td>Threat</td>
<td>Post Humiliating Images</td>
<td>Sent Links of Humiliating Images</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------</td>
<td>--------</td>
<td>------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Threat by Text</td>
<td>67</td>
<td>46.3%</td>
<td>53.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Post Humiliating Images</td>
<td>55</td>
<td>27.3%</td>
<td>72.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Links of Humiliating Images</td>
<td>38</td>
<td>13.2%</td>
<td>86.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Links to Rumors/Gossip</td>
<td>44</td>
<td>20.5%</td>
<td>79.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Hacked Email</td>
<td>12</td>
<td>41.7%</td>
<td>58.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Hacked Social Media Account</td>
<td>29</td>
<td>17.2%</td>
<td>82.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Recorded Video: Humiliation</td>
<td>75</td>
<td>13.3%</td>
<td>86.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Video: Humiliation</td>
<td>42</td>
<td>26.2%</td>
<td>73.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Forward Video: Humiliation</td>
<td>29</td>
<td>10.3%</td>
<td>89.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Recorded Video: Hurt</td>
<td>12</td>
<td>25.0%</td>
<td>75.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Video: Hurt</td>
<td>5</td>
<td>20.0%</td>
<td>80.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Forward Video: Hurt</td>
<td>9</td>
<td>22.2%</td>
<td>77.8%</td>
<td>0.0%</td>
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<tr>
<td>Posted secrets</td>
<td>31</td>
<td>25.8%</td>
<td>74.2%</td>
<td>0.0%</td>
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<td>Deliberately Excluded from Group</td>
<td>76</td>
<td>17.1%</td>
<td>82.9%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Repeated Messages Meant to be Threatening</td>
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<td>53.7%</td>
<td>46.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Recorded Video: Sex</td>
<td>23</td>
<td>21.7%</td>
<td>78.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sent Video: Sex</td>
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<td>18.2%</td>
<td>81.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Forward Video: Sex</td>
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<td>33.3%</td>
<td>66.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Weighted Average of Responses</td>
<td></td>
<td>26.4%</td>
<td>73.6%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

*Note. Victims could report multiple behaviors.*

**Predictors of Engagement in Cyberbullying Behaviors**

A logistic regression was developed with cyberbully status (1 = cyberbully) as the dependent variable to answer Research Question 2 (what factors examined in the current study, if any, are predictive of engagement in cyberbullying behaviors) and test Hypothesis 1 (individuals who endorse COH norms will be more likely to engage in cyberbullying behaviors than individuals who report low levels of COH norms). The
independent variables included age, gender (men = 1), dichotomous victim status (victim = 1), sub-clinical psychopathy, Machiavellianism, the two sadism scores, overall aggression score, measures of culture of honor, attitudes toward cyberbullying, and the behavioral reinforcement scale. Correlations among independent variables are presented in Table 8.13. All continuous variables were mean centered to aid in interpretation. Independent variables were initially entered in a single step. Forty-eight cases were removed due to missing data and an additional 11 cases were removed due to violations of normality (SR > 3.0 or Cooks D > 1.0 and Leverage > .02) leaving a final sample of 338 cases. The final Hosmer and Lemeshow test was nonsignificant (p = .12), suggesting that the model was a good fit for the data. Overall, the full model was significant ($\chi^2$ (14) = 170.73, $p < .001$), correctly predicting 78.1% (80.6% of non-perpetrators, 75.3% of perpetrators) of cases (see Table 8.16). The model as proposed contained several factors that were nonsignificant. To determine what factors should be retained in a simplified model, variables were entered in a forward block logistic regression.

Factors previously established in the literature as relating to cyberbullying perpetration (cyberbully victim status, age, sex, sub-clinical psychopathy score) were entered in the first block, and Machiavellianism was entered in the next block as the sole predictor. Both measures of everyday sadism were entered in the third block. Aggression was entered in the fourth block and the four measures of culture of honor were entered in the fifth block. The behavioral reinforcement scale was entered in the sixth block and the attitudes towards cyberbullying score was entered in the seventh and final block.
Table 8.15

**Correlations Among Study Instruments**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2. Age</td>
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<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>3. Subclinical Psychopathy</td>
<td>-.23***</td>
<td>-.09</td>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Machiavellianism</td>
<td>-.21***</td>
<td>-.13*</td>
<td>.75***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. CAST</td>
<td>-.31***</td>
<td>-.04</td>
<td>.76***</td>
<td>.67***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6. SSI</td>
<td>-.16**</td>
<td>-.07</td>
<td>.29***</td>
<td>.37***</td>
<td>.30***</td>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Attitudes Toward Cyberbullying</td>
<td>-.20***</td>
<td>-.09</td>
<td>.52***</td>
<td>.40***</td>
<td>.59***</td>
<td>.19***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Behavioral Reinforcement Scale</td>
<td>-.21***</td>
<td>-.06</td>
<td>.57***</td>
<td>.41***</td>
<td>.66***</td>
<td>.20***</td>
<td>.72***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Honor Concern Scale</td>
<td>-.04</td>
<td>-.02</td>
<td>.07</td>
<td>.09</td>
<td>.08</td>
<td>.00</td>
<td>.08</td>
<td>.02</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Honor Ideology of Women</td>
<td>-.04</td>
<td>-.03</td>
<td>.03</td>
<td>.05</td>
<td>.01</td>
<td>-.03</td>
<td>.06</td>
<td>-.03</td>
<td>.64***</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Honor Ideology of Men</td>
<td>-.27***</td>
<td>-.03</td>
<td>.40***</td>
<td>.39***</td>
<td>.45***</td>
<td>.15**</td>
<td>.36***</td>
<td>.31***</td>
<td>.34***</td>
<td>.44***</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**Psychopathy**

**Cyberbullying**

**Reinforcement Scale**

**Women**

**Men**
<table>
<thead>
<tr>
<th></th>
<th>Honor Questionnaire</th>
<th>Aggression</th>
<th>Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Honor Questionnaire</td>
<td>-.31***</td>
<td>-.02</td>
<td>.51***</td>
</tr>
<tr>
<td>13. Aggression</td>
<td>-.16**</td>
<td>-.09</td>
<td>.69***</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.
Table 8.16

*Logistic Regression Predicting Engagement in Cyberbullying Behavior - Full Model*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>b (SE)</th>
<th>95% Confidence Interval</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower</td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>Constant</td>
<td>-5.145 (1.32)</td>
<td>NA</td>
<td>.01</td>
</tr>
<tr>
<td>Victim Status</td>
<td>2.56 (.33)</td>
<td>6.81</td>
<td>12.96</td>
</tr>
<tr>
<td>Positive = 1***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.52 (.34)</td>
<td>.31</td>
<td>.59</td>
</tr>
<tr>
<td>Woman = 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.05 (.04)</td>
<td>.89</td>
<td>.95</td>
</tr>
<tr>
<td>Psychopathy*</td>
<td>1.14 (.45)</td>
<td>1.29</td>
<td>3.12</td>
</tr>
<tr>
<td>Machiavellianism</td>
<td>-.36</td>
<td>.39</td>
<td>.70</td>
</tr>
<tr>
<td>CAST</td>
<td>.02 (.45)</td>
<td>.43</td>
<td>1.02</td>
</tr>
<tr>
<td>SSI</td>
<td>.31 (.23)</td>
<td>.87</td>
<td>1.36</td>
</tr>
<tr>
<td>Honor Concerns Scale**</td>
<td>.43 (.13)</td>
<td>1.19</td>
<td>1.53</td>
</tr>
<tr>
<td>Honor Ideology of Women*</td>
<td>-.36 (.13)</td>
<td>.60</td>
<td>.77</td>
</tr>
<tr>
<td>Honor Ideology of Men</td>
<td>.23 (.12)</td>
<td>.99</td>
<td>1.26</td>
</tr>
<tr>
<td>Honor Questionnaire</td>
<td>-.29 (.26)</td>
<td>.49</td>
<td>.75</td>
</tr>
<tr>
<td>Aggression Questionnaire</td>
<td>.02 (.36)</td>
<td>.51</td>
<td>1.02</td>
</tr>
<tr>
<td>Attitudes Toward Cyberbullying**</td>
<td>.09 (.03)</td>
<td>1.03</td>
<td>1.10</td>
</tr>
<tr>
<td>Behavioral Reinforcement Scale</td>
<td>.01 (.02)</td>
<td>.97</td>
<td>1.01</td>
</tr>
</tbody>
</table>

-2 Log Likelihood = 295.40  Cox & Snell R = .397  Nagelkerke R² = .530  Model χ² (14) = 170.73, p < .001

* *p < .05. **p < .01. ***p < .001.

All predictors in the first step (victim status, age, gender, and sub-clinical psychopathy score) were retained due to support in previous studies. The steps that
included Machiavellianism ($\chi^2 (1) = .23, p = .64$), measures of everyday sadism ($\chi^2(2) = 4.19, p = .12$) and participants’ overall aggression score ($\chi^2 (1) = 1.07, p = .30$) were nonsignificant and were removed leaving 10 predictors. The original AIC of the full model was 326.40 and the AIC for the model with the factors removed was 321.20 ($\chi^2 (4) = 5.21, p = .26$), suggesting that the removal of the factors did not significantly alter the model.

Examination of the model indicated that several variables within the significant steps were nonsignificant. The COH step was significant ($\chi^2 (4) = 14.86, p = .005$) and the Hosmer-Lemeshow test was nonsignificant ($p = .63$) suggesting that the model including the scales was a good fit. The Honor Questionnaire scale was nonsignificant ($p = .49$) and was removed. The AIC of the original model was 321.20 and with the scale removed was 320.86 ($\chi^2 (1) = .33, p = .56$). Next, the impact of the Honor Ideology of Men scale was examined, with the AIC$_{Original} = 320.86$ and with the scale removed AIC = 320.96 ($\chi^2 (1) = .10, p = .75$), suggesting that the removal of the scale did not significantly influence the model fit. However, with the removal of the Honor Ideology of Men scale, the Honor Ideology of Women scale became nonsignificant ($p = .12$). This scale was then removed, resulting in a nonsignificant increase in the AIC (321.42; $\chi^2 (1) = .46, p = .50$).

The final model included 7 factors, four of which were significant. The model correctly predicted 78.4% of cases (78.9% of non-perpetrators, and 77.8% of perpetrators; Table 8.17). A ROC curve was fit using the predicted probability of group membership. The area under the curve (AUC) was significantly different than .50 (AUC = .87, $SE = .019, p < .001$; see Figure 8.1), suggesting that the model was significantly
better than chance at classifying group membership. Further analysis comparing the new model to the previous model established by Gibb and Devereux (2014) showed that the new model was significantly better at predicting group membership than the previous model ($p = .048$; see Figure 8.2).

Table 8.17

*Logistic Regression Predicting Engagement in Cyberbullying Behavior - Reduced Model*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$ ($SE$)</td>
</tr>
<tr>
<td>Constant</td>
<td>-5.63 (1.26)</td>
</tr>
<tr>
<td>Victim</td>
<td>2.53 (.32)</td>
</tr>
<tr>
<td>Status*** Positive = 1</td>
<td>.53 (.31)</td>
</tr>
<tr>
<td>Gender</td>
<td>-.53 (.31)</td>
</tr>
<tr>
<td>Woman = 1</td>
<td>-.53 (.31)</td>
</tr>
<tr>
<td>Age</td>
<td>-.04 (.03)</td>
</tr>
<tr>
<td>Psychopathy**</td>
<td>.89 (.30)</td>
</tr>
<tr>
<td>Honor Concerns Scale**</td>
<td>.28 (.09)</td>
</tr>
<tr>
<td>Scale**</td>
<td>.09 (.03)</td>
</tr>
<tr>
<td>Attitudes Toward</td>
<td></td>
</tr>
<tr>
<td>Behavioral Scale</td>
<td>.01 (.02)</td>
</tr>
</tbody>
</table>
| Scale                   | -2LogLikelihood = 305.42 Cox & Snell R = 0.380 Nagelkerke R Square = 0.508 Model $\chi^2$ (7) = 161.71, $p < .001$

* $p < .05$. ** $p < .01$. *** $p < .001$. 
Figure 8.1. ROC Curve for Logistic Regression

Note. AUC = .87. Shaded area represents 95% confidence interval.
In addition to the reduced model, two additional logistic regressions were computed. In the first model, an interaction term between the Honor Concerns scale and gender = men was computed. The addition of the interaction term resulted in a nonsignificant change in the model (\(\chi^2 (1) = .80, p = .37\)) and the interaction term was nonsignificant (Table 8.18).
Table 8.18

*Logistic Regression Predicting Engagement in Cyberbullying Behaviors COH*

*Moderation by Gender = Male*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$b$ (SE)</th>
<th>Lower</th>
<th>Odds Ratio</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-5.73 (1.33)</td>
<td>NA</td>
<td>.003</td>
<td>NA</td>
</tr>
<tr>
<td>Victim Status***</td>
<td>2.54 (.32)</td>
<td>6.82</td>
<td>12.68</td>
<td>23.57</td>
</tr>
<tr>
<td>Gender Man = 1</td>
<td>-.44 (1.14)</td>
<td>.07</td>
<td>.64</td>
<td>6.00</td>
</tr>
<tr>
<td>Age</td>
<td>-.04 (.03)</td>
<td>.90</td>
<td>.96</td>
<td>1.02</td>
</tr>
<tr>
<td>Psychopathy**</td>
<td>.89 (.30)</td>
<td>1.34</td>
<td>2.43</td>
<td>4.39</td>
</tr>
<tr>
<td>Honor Concerns</td>
<td>.20 (.13)</td>
<td>.94</td>
<td>1.22</td>
<td>1.58</td>
</tr>
<tr>
<td>Attitudes Toward</td>
<td>.10 (.03)</td>
<td>1.03</td>
<td>1.10</td>
<td>1.17</td>
</tr>
<tr>
<td>Cyberbullying**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral</td>
<td>.01 (.02)</td>
<td>.97</td>
<td>1.01</td>
<td>1.04</td>
</tr>
<tr>
<td>Reinforcement Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (Male = 1) x</td>
<td>.17 (.19)</td>
<td>.82</td>
<td>1.19</td>
<td>1.72</td>
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</tbody>
</table>

-2LogLikelihood = 304.62. Cox & Snell R = .382 Nagelkerke R Square = .510 Model $\chi^2$ (8) = 162.51, $p < .001$

* $p < .05$. ** $p < .01$. *** $p < .001$. 
Table 8.19

Logistic Regression Predicting Engagement in Cyberbullying Behaviors COH

Moderation by Gender = Female

<table>
<thead>
<tr>
<th>Predictor</th>
<th>b (SE)</th>
<th>95% Confidence Interval</th>
<th>Lower</th>
<th>Odds Ratio</th>
<th>Upper</th>
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</tr>
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<td>Victim Status***</td>
<td>2.54 (.32)</td>
<td>6.82</td>
<td>12.68</td>
<td>23.57</td>
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</tr>
<tr>
<td>Gender</td>
<td>.44 (1.14)</td>
<td>.17</td>
<td>1.56</td>
<td>14.53</td>
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</tr>
<tr>
<td>Age</td>
<td>-.04 (.03)</td>
<td>.90</td>
<td>.96</td>
<td>1.02</td>
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</tr>
<tr>
<td>Psychopathy**</td>
<td>.89 (.30)</td>
<td>1.34</td>
<td>2.43</td>
<td>4.39</td>
<td></td>
</tr>
<tr>
<td>Honor Concerns</td>
<td>.37 (.14)</td>
<td>1.09</td>
<td>1.44</td>
<td>1.90</td>
<td></td>
</tr>
<tr>
<td>Scale**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes Toward</td>
<td>.10 (.03)</td>
<td>1.03</td>
<td>1.10</td>
<td>1.17</td>
<td></td>
</tr>
<tr>
<td>Cyberbullying**</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral</td>
<td>.01 (.02)</td>
<td>.97</td>
<td>1.01</td>
<td>1.04</td>
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</tr>
<tr>
<td>Reinforcement Scale</td>
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<td></td>
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</tr>
<tr>
<td>Gender (Female = 1) x HCS</td>
<td>-.17 (.19)</td>
<td>.58</td>
<td>.84</td>
<td>1.23</td>
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</tbody>
</table>

-2LogLikelihood = 304.62. Cox & Snell R = .382 Nagelkerke R Square = .510 Model $\chi^2 (8) = 162.51, p < .001$

*p < .05. **p < .01. ***p < .001.

Next, an interaction term between the Honor Concerns scale and gender = female was computed. Although the overall model remained significant ($p < .001$), the addition of the
interaction term did not significantly improve the model ($\chi^2 (1) = .80, p = .37$) and the interaction term was nonsignificant (Table 8.19).

**Research Question 2: What factors examined in the current study, if any, are predictive of engagement in cyberbullying behaviors?** Although significant in previous models, age ($p = .20$) was nonsignificant in the current sample. Behavioral reinforcement of cyberbullying behaviors was also nonsignificant ($p = .59$) although the scale was retained due to its impact on the overall model Hosmer-Lemeshow statistic. Similar to previous results, positive victim status was associated with engagement in cyberbullying behaviors ($\beta = 2.53; p < .001$), with victims approximately 13 times more likely to report that they had engaged in the behavior than non-victims. Sub-clinical psychopathy was also significant in the model ($\beta = .89; p = .003$), with each 1-point increase in mean score approximately tripling the relative risk of engaging in cyberbullying behaviors. Frequency analysis of the current sample indicated that 16.6% (n = 56) of participants had sub-clinical psychopathy scores greater than 1 standard deviation (SD = .59) greater than the mean ($M = 2.22$). In addition to these established factors, two additional factors were also significant in the current model.

Self-reported acceptance of culture of honor norms as measured by the Honor Concerns Scale (Ijzerman et al., 2007) was significant ($\beta = .27, p = .005$), with each 1-point increase in mean score raising the relative risk of engaging in cyberbullying behaviors by 32%. Frequency analysis indicated that approximately 16.6% of participants (n = 56) reported scores higher than 1 SD of the mean ($M = 5.73; SD = 1.54$). The Attitudes Toward Cyberbullying scale (Barlett & Gentile, 2012) was also significant ($\beta = .091, p = .005$), increasing the relative risk of engaging in cyberbullying by
approximately 10% for each 6-point increase in reported acceptance. Frequency analysis indicated that approximately 17.8% of participants (n = 60) reported scores higher than 1 SD (6.22) of the mean (M = 17.68).

**Research Question 2.1: What relationship, if any, exists between gender and engagement in cyberbullying behaviors?** Despite previous studies suggesting gender was predictive of engagement in cyberbullying behaviors, it was not predictive in the current sample (p = .09).

**Hypothesis 1:** Individuals who endorse COH norms will be more likely to engage in cyberbullying behaviors than individuals who report low levels of support for COH norms. Hypothesis 1 was supported. The Honor Concerns scale (Ijzerman et al., 2007) was significant in the final reduced model (Table 8.17).

**Hypothesis 1a:** Men who endorse COH norms will be more likely to engage in cyberbullying behaviors than men who do not endorse COH norms. An interaction term was calculated using the mean centered Honor Concerns scale and the gender term for both women and men. There was no significant interaction between gender and culture of honor norms for men (p = .37; Table 8.16). Hypotheses 1a was not supported.

**Hypothesis 1b:** Women who endorse COH norms will be more likely to engage in cyberbullying behaviors than women who do not endorse COH norms. There was no significant interaction between gender and culture of honor norms for women (p = .37; Table 8.17). Hypotheses 1b was not supported.

**Predictors of the Range of Cyberbullying Behaviors**

A negative binomial regression was developed with the range of cyberbullying behaviors as the dependent variable to test Hypothesis 2 (individuals who report high
levels of support for COH norms will be more likely to engage in a wider range of cyberbullying behaviors compared to individuals who report low levels of support for COH norms) and Research Question 3 (what relationship, if any, exists between gender and the range of cyberbullying behaviors engaged in?). The independent variables were age, gender (men = 1), victim status (victim = 1), sub-clinical psychopathy score, Machiavellianism score, both everyday sadism scores, all four culture of honor scales, the aggression questionnaire, the behavioral reinforcement scale (Barlett & Gentile, 2012), and attitudes toward cyberbullying scale (Barlett & Gentile, 2012). Similar to the logistic regression analysis, 48 cases were removed due to missing data. The negative binomial model was run using the MASS package (Venables & Ripley, 2002) in the R framework (R Development Core Team, 2016) “Supposedly Educational” (R Ver. 3.3.0). The model utilized the full sample with 48 cases removed due to missing data.

Utilizing a significance level of $p < .05$ and examining the exponentiated 95% CI, victim status ($\beta = 1.51, p < .001$), gender ($\beta = .39, p = .02$), and attitudes toward cyberbullying ($\beta = .08, p < .001$) were significant predictors of the range of behaviors (Table 8.20). In order to develop a more parsimonious model, factors not significant were removed (Table 8.21). Comparison of the $2*\text{Loglikelihood}$ indicated that there was no significant difference between the full ($2*\text{LL} = -984.78$) and the reduced ($2*\text{LL} = -990.07; \chi^2 (10) = 5.29, p = .87$) models. Similar to previous results, victims of cyberbullying were more likely to engage in a wider range of cyberbullying behaviors, with cyber-victims engaging in approximately 4.70 (95%CI [3.43, 6.51]) times more behaviors than non-victims. Compared to women, men were more likely to engage in a wider range of cyberbullying behaviors, with men engaging in approximately 1.52
(95%CI [1.12, 2.06]) times more behaviors than women. For every 6-point increase in self-reported acceptance of cyberbullying attitudes, the range of behaviors engaged in increased by 9% (95%CI [1.07, 1.12]).

Table 8.20

*Negative Binomial Model Predicting Range of Cyberbullying Behaviors*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>b (SE)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Full Model</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-.41 (.61)</td>
<td>NA</td>
</tr>
<tr>
<td>Victim Status</td>
<td>1.51 (.17)</td>
<td>3.22</td>
</tr>
<tr>
<td>Positive = 1***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.39 (.16)</td>
<td>1.08</td>
</tr>
<tr>
<td>Male = 1*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.02 (.02)</td>
<td>.94</td>
</tr>
<tr>
<td>Psychopathy</td>
<td>.19 (.22)</td>
<td>.76</td>
</tr>
<tr>
<td>Machiavellianism</td>
<td>-.14 (.16)</td>
<td>.64</td>
</tr>
<tr>
<td>CAST</td>
<td>.02 (.20)</td>
<td>.68</td>
</tr>
<tr>
<td>Honor Concerns Scale</td>
<td>-.07 (.07)</td>
<td>.82</td>
</tr>
<tr>
<td>Honor Ideology of Women</td>
<td>-.01 (.07)</td>
<td>.87</td>
</tr>
<tr>
<td>Honor Ideology of Men</td>
<td>-.02 (.06)</td>
<td>.86</td>
</tr>
<tr>
<td>Honor Questionnaire</td>
<td>.09 (.11)</td>
<td>.89</td>
</tr>
<tr>
<td>Aggression Questionnaire</td>
<td>-.02 (.19)</td>
<td>.67</td>
</tr>
<tr>
<td>Attitudes Toward Cyberbullying**</td>
<td>.09 (.02)</td>
<td>1.06</td>
</tr>
<tr>
<td>Behavioral Reinforcement Scale</td>
<td>-.001 (.01)</td>
<td>.98</td>
</tr>
</tbody>
</table>

2*Log Likelihood = -984.78 AIC = 1014.8
Table 8.21

Negative Binomial Model Predicting Range of Cyberbullying Behaviors - Reduced Model

<table>
<thead>
<tr>
<th>Reduced Model</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-2.16 (.28)</td>
<td>NA</td>
<td>.12</td>
<td>NA</td>
</tr>
<tr>
<td>Victim Status***</td>
<td>1.57 (.16)</td>
<td>3.50</td>
<td>4.80</td>
<td>6.64</td>
</tr>
<tr>
<td>Positive = 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.43 (.16)</td>
<td>1.13</td>
<td>1.54</td>
<td>2.09</td>
</tr>
<tr>
<td>Male = 1**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes Toward Cyberbullying***</td>
<td>.09 (.02)</td>
<td>1.07</td>
<td>1.09</td>
<td>1.12</td>
</tr>
</tbody>
</table>

2*Log Likelihood = -990.07 AIC = 1000.1

*p < .05. **p < .01. ***p < .001.

Hypothesis 2: Individuals who report high levels of support for COH norms will be more likely to engage in a wider range of cyberbullying behaviors compared to individuals who report low levels of support for COH norms. Hypothesis 2 was not supported as no measure of culture of honor norms significantly predicted the range of cyberbullying behaviors. The full negative binomial model is presented in Table 8.18 and the reduced model is presented in Table 8.19.

Research Question 3: What relationship, if any, exists between gender and the range of cyberbullying behaviors engaged in? Men reported engaging in a 54% wider range of cyberbullying behaviors compared to women (Table 8.21).
Mediation of Relationship between Gender and Range of Behaviors

To determine if the relationship between gender and the range of behaviors was mediated by any of the proposed factors associated with risk, mediation analyses were completed using the ‘mediation’ package (Tingley, Yamamoto, Hirose, Keele, & Imai, 2014) in the R framework “Supposedly Educational (R Ver. 3.3.0)”. The package MASS (Venables & Ripley, 2002) was used to compute the negative binomial model used in the mediation analyses. Following the recommendations of Preacher and Hayes (2008), bias corrected and accelerated (BCa) intervals were utilized with 2000 boot strapped samples. The reduced negative binomial model (Table 8.23) was used in all analyses.

As the original range model did not include perceptions of consequences, a second negative binomial model was developed using all the factors in the full negative binomial model described above plus self-reported measures of perceived risk of confrontation and risk of consequences (RQ 3.1 – 3.5). An additional reason for the development of the second model is that only individuals who indicated engaging in cyberbullying behaviors were asked to complete the perceived risk questions and were included in this model (n = 197). Thirty-four cases were removed due to missing data leaving 163 cases. For the full model, victim status (β = .56, p < .001), gender (.28, p = .03), mean centered honor concern (β = -.16, p = .006) and attitudes toward cyberbullying (β = .06, p < .001) were significant (Table 8.20). In order to develop the most parsimonious model, nonsignificant factors were removed leaving only the significant factors noted above and the three measures of perceived risk. Comparison of the two models suggested that there was no significant difference between the full (2*LL = -656.72) and the reduced (2*LL = -662.54; χ² (9) = 5.83, p = .76) models. For the final
reduced model, victim status ($\beta = .50, p < .001$), gender ($\beta = .28, p = .02$), self-reported COH acceptance via the Honor Concern scale (Ijzerman et al., 2007) ($\beta = -.14, p = .001$), and attitudes toward cyberbullying (Barlett & Gentile, 2012) ($\beta = .06, p < .001$), and confidence in not experiencing institutional consequences ($\beta = -.10, p = .05$) were significant (Table 8.21).

Table 8.22

*Negative Binomial Model Predicting Range of Cyberbullying Behaviors Including Perception of Consequences*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$b \ (SE)$</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.40 (.24)</td>
<td>1.49 NA</td>
</tr>
<tr>
<td>Victim Status : Positive = 1***</td>
<td>.56 (.16)</td>
<td>1.27 1.74 2.42</td>
</tr>
<tr>
<td>Gender : Male = 1*</td>
<td>.28 (.13)</td>
<td>1.03 1.32 1.69</td>
</tr>
<tr>
<td>Age</td>
<td>-.001(.02)</td>
<td>nb.96 1.00 1.03</td>
</tr>
<tr>
<td>Sub-clinical Psychopathy</td>
<td>.03 (.18)</td>
<td>.71 1.03 1.48</td>
</tr>
<tr>
<td>Machiavellianism</td>
<td>-.10 (.13)</td>
<td>.70  .90 1.16</td>
</tr>
<tr>
<td>CAST</td>
<td>.07 (.15)</td>
<td>.79 1.07 1.46</td>
</tr>
<tr>
<td>Honor Concerns Scale**</td>
<td>-.16 (.06)</td>
<td>.85  .76  .95</td>
</tr>
<tr>
<td>Honor Ideology of Women</td>
<td>.03 (.06)</td>
<td>.93 1.03 1.15</td>
</tr>
<tr>
<td>Honor Ideology of Men</td>
<td>-.06 (.05)</td>
<td>.85  .94 1.05</td>
</tr>
<tr>
<td>Honor Questionnaire</td>
<td>.17 (.09)</td>
<td>.99 1.18 1.40</td>
</tr>
<tr>
<td>Aggression Scale</td>
<td>-.16 (.15)</td>
<td>.63  .85 1.15</td>
</tr>
<tr>
<td>Attitudes Toward Cyberbullying***</td>
<td>.06 (.01)</td>
<td>1.03 1.06 1.08</td>
</tr>
<tr>
<td>Behavioral Reinforcement Scale</td>
<td>-.001(.01)</td>
<td>.99 1.00 1.01</td>
</tr>
</tbody>
</table>
Table 8.23

**Negative Binomial Model Predicting Range of Cyberbullying Behaviors Including Perception of Consequences – Reduced Model**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>( b (SE) )</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.57 (.22)</td>
<td>NA</td>
</tr>
<tr>
<td>Victim Status: Positive = 1***</td>
<td>.50 (.15)</td>
<td>1.23</td>
</tr>
<tr>
<td>Gender: Male = 1*</td>
<td>.28 (.12)</td>
<td>1.05</td>
</tr>
<tr>
<td>Honor Concerns Scale**</td>
<td>-.14 (.04)</td>
<td>.80</td>
</tr>
<tr>
<td>Attitudes Toward Cyberbullying***</td>
<td>.06 (.01)</td>
<td>1.04</td>
</tr>
<tr>
<td>Likelihood of Confrontation</td>
<td>.06 (.05)</td>
<td>.96</td>
</tr>
<tr>
<td>Likelihood of Social Consequences</td>
<td>.04 (.07)</td>
<td>.91</td>
</tr>
<tr>
<td>Likelihood of Institutional Consequences</td>
<td>-.10 (.05)</td>
<td>.81</td>
</tr>
</tbody>
</table>

\(-2\text{LogLikelihood} = -672.99\text{ AIC} = 688.98\)

+ \( p = .05\). *\( p < .05\). **\( p < .01\). ***\( p < .001\).*

Similar to previous results, examination of the 95% CIs indicated that victims were more likely to engage in a wider range of cyberbullying behaviors (1.65, 95% CI [1.23, 2.23]) compared to non-victims. Men were also more likely to engage in a wider range of cyberbullying behaviors (1.32, 95% CI [1.05, 1.67]), and individuals who held
positive attitudes toward cyberbullying were also more likely to engage in a wider range (1.06, 95%CI [1.04, 1.08]). Individuals who reported high levels of COH acceptance were less likely to engage in a wide range of cyberbullying behaviors (.87, 95%CI [.80, .95]), however. None of the measured perceptions related to risk were significant except the marginally significant ($p = .05$) $p$ value associated with institutional consequences.

**RQ 3.1 Do normative beliefs regarding cyberbullying behaviors mediate the relationship between gender and the range of cyberbullying behaviors?** There was a significant impact of normative beliefs on gender, such that the estimated 1.09 increase in range of behaviors associated with male gender an estimated .48 was the result of normative beliefs regarding cyberbullying behavior ($p < .001$, 95%CI [.21, .96]; Figure 8.3).

*Figure 8.3.* Mediation of the Effect of Gender = Men by Normative Beliefs Regarding Cyberbullying on Range of Behaviors Reported
There was also a significant impact of normative beliefs on gender for women, such that of the estimated 1.09 increase in probability of engaging in cyberbullying behavior due to gender, an estimated .31 was the result of normative beliefs regarding cyberbullying behavior (\( p < .001, 95\% \text{CI} [.13, .63]; \text{Figure 8.4} \)).

*Figure 8.4.* Mediation of the Effect of Gender = Female by Normative Beliefs Regarding Cyberbullying on Range of Behaviors Reported

\[
\begin{align*}
\text{ab} &= .31; \ p < .001 \\
\text{Gender} : \ Female & \quad \text{Mean Centered Attitudes Toward Cyberbullying} \\
& \quad \text{Cyberaggressive Behavior} \\
\text{c'} &= .94; \ p = .01
\end{align*}
\]

**RQ 3.2 Do perceptions of behavioral reinforcement mediate the relationship between gender and the range of cyberbullying behaviors?** Behavioral reinforcement was not significant in the original model and its removal resulted in a nonsignificant change in AIC (\( p = .95 \)). Despite this, a mediation analysis with mean centered behavioral reinforcement was computed. There was no significant impact of behavioral reinforcement on gender for men (\( p = .58; \text{Figure 8.5} \)) or for women (\( p = .58; \text{Figure 8.6} \)).
Figure 8.5. Mediation of the Effect of Gender = Male by Perceptions of Behavioral Reinforcement on the Range of Behaviors Reported

\[ ab = .02; p = .58 \]

\[ c' = .09; p = .03 \]
**RQ 3.3 Do perceptions of social consequences mediate the relationship between gender and range of cyberbullying behaviors?** There was no significant mediation for perceived likelihood of social consequences for men ($p = .55$; Figure 8.7) or women ($p = .55$; Figure 8.8).
Figure 8.7. Mediation of the Effect of Gender = Male by Perceptions of Experiencing Social Consequences on the Range of Behaviors Reported.

\[ ab = 0.03; p = 0.55 \]

Figure 8.8. Mediation of the Effect of Gender = Female by Perceptions of Experiencing Social Consequences on the Range of Behaviors Reported.

\[ ab = 0.04; p = 0.55 \]
RQ 3.4 Do perceptions regarding the likelihood of institutional consequences mediate the relationship between gender and the range of cyberbullying behaviors?

There was no significant mediation for perceived institutional consequences for men ($p = .26$; Figure 8.9) or for women ($p = .26$; Figure 8.10).

Figure 8.9. Mediation of the Effect of Gender = Male by Perceptions of Experiencing Institutional Consequences on the Range of Behaviors Reported.

\[ ab = .10; p = .26 \]

\[ c' = .94; p = .02 \]
Figure 8.10. Mediation of Effect of Gender = Female by Perceptions of Experiencing Institutional Consequences on the Range of Behaviors Reported

RQ 3.5 Does the perceived likelihood of confrontation mediate the relationship between gender and the range of behaviors? There was no significant mediation for perceived likelihood of confrontation and the effect of gender on the range of behaviors engaged in for either men ($p = .71$; Figure 8.11) or women ($p = .71$; Figure 8.12).
Figure 8.11. Mediation of the Effect of Gender = Male by Perceptions of Being Confronted on the Range of Behaviors Reported
Figure 8.12. Mediation of the Effect of Gender = Female by Perceptions of Being Confronted on the Range of Behaviors Reported.

Relationship Between Measures of Recency and Range with the Distinguishing Characteristics of Cyberbullying

To determine if the proposed distinguishing characteristics of cyberbullying are related to more recent engagement in various cyberbullying behaviors (RQ 4) a linear regression was developed. The predictor variables were the total number of times the participant had completed any of the behaviors, the mean intended distress of all completed behaviors, the difference in perceived popularity, the difference in perceived intelligence, the perceived difference in centrality, mean confidence that the perpetrator would not be confronted, and the total number of behaviors resulting in a confrontation. The outcome variable (recency and range) was the sum of six time period possibilities (e.g., within the last week, within the last month) with higher scores equaling engagement
in more types of cyberbullying behaviors across more possible time periods. Mean scores for frequency, intended distress, perceived popularity, perceived intelligence, and perceived centrality can be found in Table 8.3. On average, perpetrators reported being confronted for approximately 1 behavior ($M_{\text{Behavior}} = 1.17, SE = .13$), with some reporting not being confronted at all or being confronted because of a maximum 8 different behaviors.

The regression included only those participants who indicated they had completed any of the cyberbullying behaviors ($n = 197$) and answered the follow-up questions. Initial exploratory analysis of the dependent variable indicated that it was significantly kurtotic (15.84, SE = .35) and positively skewed (3.60, SE = .17; see Appendix C, Figure 1). Examination of the Box plots indicated 15 potential outliers. Following the recommendations of Cohen, Cohen, West & Aiken (2010), these cases were removed. Removal of these cases resulted in a reduction in both kurtosis (.42, SE = .36) and skew (1.13, SE = .18). Further examination of the Box plots indicated an additional 4 potential outliers, leaving a total of 154 cases. Removal of these cases further reduced kurtosis (.29, SE = .36) and skew (1.08, SE = .18).

One additional case was removed due to missing data, and an additional 7 cases were removed for violations of normality (SR > 3.0, or Cooks D > .027 and Mahalanobis distance > 24.32 and Leverage > .10) leaving a total sample of 146 (Cohen et al., 2010). Both tolerance and VIF indices (see Table 8.23) indicated that multicollinearity was not a significant issue for the current sample. The regression model was significant ($F (7) = XX, p < .001$) and the model produced a significant increase in the amount of variance accounted for ($\Delta R^2 = .XX, p < .001$) over the null model (Table 8.25).
Table 8.24

*Correlations Between Recency/Range and Predictor Variables in the Linear Regression Model*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Recency and Range</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Frequency</td>
<td>.52***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Mean Intended Distress</td>
<td>.13</td>
<td>.15</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Popularity</td>
<td>.34***</td>
<td>.14</td>
<td>.22**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Intelligence</td>
<td>.32***</td>
<td>.13</td>
<td>.18*</td>
<td>.55***</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Centrality</td>
<td>.24**</td>
<td>.15</td>
<td>.18*</td>
<td>.76***</td>
<td>.61***</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7. Confidence in Not Being Confronted</td>
<td>-.02</td>
<td>.07</td>
<td>-.14</td>
<td>.20*</td>
<td>.15</td>
<td>.13</td>
<td>1</td>
</tr>
<tr>
<td>8. Number of Behaviors</td>
<td>.35***</td>
<td>.17*</td>
<td>.27**</td>
<td>.08</td>
<td>-.02</td>
<td>.01</td>
<td>-.25**</td>
</tr>
</tbody>
</table>

*Note.* *p* < .05. **p** < .01. ***p*** < .001.

Table 8.25

*Linear Regression Predicting Recency and Range of Engagement in Cyberbullying Behavior*

<table>
<thead>
<tr>
<th></th>
<th>b</th>
<th>SE b</th>
<th>β</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>6.51</td>
<td>.32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Frequency of Behavior***</td>
<td>.10</td>
<td>.01</td>
<td>.46</td>
<td>.93</td>
<td>1.08</td>
</tr>
<tr>
<td>Intended Distress</td>
<td>-.38</td>
<td>.28</td>
<td>-.09</td>
<td>.85</td>
<td>1.17</td>
</tr>
<tr>
<td>Popularity *</td>
<td>1.24</td>
<td>.51</td>
<td>.24</td>
<td>.41</td>
<td>2.44</td>
</tr>
<tr>
<td>Intelligence*</td>
<td>.91</td>
<td>.26</td>
<td>.21</td>
<td>.64</td>
<td>1.57</td>
</tr>
<tr>
<td>Centrality</td>
<td>-.63</td>
<td>.45</td>
<td>-.14</td>
<td>.39</td>
<td>2.54</td>
</tr>
</tbody>
</table>
RQ 4: What relationship, if any, exists between the proposed distinguishing characteristics of cyberbullying and engagement in cyberbullying behaviors? Mean centered frequency, perceived difference in popularity, perceived difference in intelligence, as well as the total number of behaviors that resulted in a confrontation were positively associated with engagement in cyberbullying behaviors. Intended distress, differences in perceived centrality and mean centered confidence of not being confronted were not significant (see Table 8.25).

Examination of COH Acceptance within the Current Sample

To determine if individuals who grew up in areas classified as high COH in previous studies reported elevated COH scores in the current study (Hypothesis 3), zip codes were classified at the state level using regional census divisions (U.S. Census Bureau, 2016) similar to previous classification schemes (Cohen, 1998). An overwhelming majority (n = 369) of participants were from the Western (97.9%, n = 319) or Southern (.6%, n = 2) Census Regions.

Hypothesis 3: Individuals who grow up in areas classified as COH areas in previous studies will report elevated COH scores compared to individuals who grew up in areas classified as non-COH areas. There were not enough participants from non-COH census regions, so Hypothesis 3 could not be directly tested. Examination of mean

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2 In addition, an ordinal regression analysis was also conducted that included all cases. The final model was significant ($\chi^2 (7) = 48.50, p < .001$) with a -2 LogLikelihood of 985.70. The original model was replicated overall, with the only difference being the non-significance of popularity.
reported scores showed that a majority of participants reported relatively high scores on all measures utilized in the current study (see Table 8.26). Median and interquartile ranges for all measures used in the current study are also displayed in Table 8.26.

Table 8.26

*Overall Means, Standard Deviation, Median and Interquartile Range of the COH Scales for Participants (n = 383)*

<table>
<thead>
<tr>
<th>Scale</th>
<th>M (SD)</th>
<th>Median</th>
<th>Interquartile Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honor Concern Scale</td>
<td>5.74 (1.56)</td>
<td>5.78</td>
<td>1.67</td>
</tr>
<tr>
<td>Honor Ideology for Women</td>
<td>6.04 (1.65)</td>
<td>6.00</td>
<td>2.17</td>
</tr>
<tr>
<td>Honor Ideology for Men</td>
<td>4.49 (1.77)</td>
<td>4.81</td>
<td>2.25</td>
</tr>
<tr>
<td>Honor Questionnaire</td>
<td>1.89 (1.01)</td>
<td>1.67</td>
<td>1.33</td>
</tr>
</tbody>
</table>

*Hypothesis 3a: Men from a state typically identified as an honor state will endorse COH norms at a significantly higher rate than women from a state typically identified as an honor state.* Using only those participants from COH census regions, participants reported relatively high scores on all measures of COH acceptance (see Table 8.26). To reduce familywise error, alpha was set at .0125 as four independent samples t-tests were conducted. Levene’s test was nonsignificant for the Honor Concerns scale (\( p = .075 \)), the Honor Ideology for Women scale (\( p = .28 \)), and Honor Ideology of Men (\( p = .39 \)) scales but was significant for the Honor Questionnaire (\( p < .001 \)) so the corrected statistic is reported for that scale. There were no significant differences between men and women in reported acceptance for either the Honor Concerns scale or the Honor Ideology for Women scale (see Table 8.27.). There was a significant difference for the Honor Ideology for Men scale and the Honor Questionnaire, such that men reported
significantly more acceptance compared to women (see Table 8.27). Hypothesis 3a was supported for two of the four scales included.

Table 8.27

Means and Standard Deviations of the Four Culture Of Honor Scales by Gender

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>t (336)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honor Concern Scale</td>
<td>5.80 (1.69)</td>
<td>5.69 (1.46)</td>
<td>.60</td>
</tr>
<tr>
<td>Honor Ideology for Women</td>
<td>6.10 (1.59)</td>
<td>5.97 (1.65)</td>
<td>.66</td>
</tr>
<tr>
<td>Honor Ideology for Men***</td>
<td>5.12 (1.71)</td>
<td>4.11 (1.70)</td>
<td>5.18</td>
</tr>
<tr>
<td>Honor Questionnaire***</td>
<td>2.30 (1.13)</td>
<td>1.65 (.86)</td>
<td>5.48</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.

Table 8.28

Summary of Findings – Study 1

<table>
<thead>
<tr>
<th>Research Question/Hypothesis</th>
<th>Conclusion</th>
</tr>
</thead>
</table>
| RQ 1                        | • Participants who engaged in CBBs reported expecting to not experience social or institutional consequences  
• These expectations were confirmed through reports of actual experience of social / institutional consequences  
• Most participants who reported engaging in CBBs reported not being confronted by their target although rates differed by behavior |
| RQ 2                        | • Similar to previous results, positive victim status, sub-clinical psychopathy were predictive of engagement in CBBs  
• Culture of honor norms as measured by the Honor Concerns Scale (Ijzerman et al., 2007) and Attitudes Toward Cyberbullying (Barlett & Gentile, 2012) were also predictive of engagement in CBBs  
• Contrary to expectations, everyday sadism as measured by the CAST scale (Buckels et al, 2013; Buckels & Paulhus, 2014) was not predictive of engagement in CBBs |
| RQ 2.1                      | • Men were not more likely to engage in the CBBs measured in the current study compared to women |
| RQ 3                        | • Men were more likely to engage in a wider range of CBBs compared to women |
| RQ 3.1                      | • Normative beliefs, as measured by the Attitudes Toward Cyberbullying scale (Barlett & Gentile, 2012) mediated the relationship between gender and the range of behaviors engaged in |
| RQ 3.2                      | • Perceptions of behavioral reinforcement did not mediate the
RQ 3.3 • Perceptions regarding the likelihood of social consequences did not mediate the relationship between gender and the *range* of behaviors engaged in

RQ 3.4 • Perceptions regarding the likelihood of institutional consequences did not mediate the relationship between gender and the *range* of behaviors engaged in

RQ 3.5 • Perceptions regarding the likelihood of confrontation did not mediate the relationship between gender and the *range* of behaviors engaged in

RQ 4 • Mean frequency, perceived differences in popularity and intelligence, and the number of behaviors resulting in confrontation were significantly related to recency and range of behaviors engaged in

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1</td>
<td>Supported</td>
</tr>
<tr>
<td>Hypothesis 1a</td>
<td>Not supported</td>
</tr>
<tr>
<td>Hypothesis 1b</td>
<td>Not supported</td>
</tr>
<tr>
<td>Hypothesis 2</td>
<td>Not supported</td>
</tr>
<tr>
<td>Hypothesis 2a</td>
<td>Not supported</td>
</tr>
<tr>
<td>Hypothesis 2b</td>
<td>Not supported</td>
</tr>
<tr>
<td>Hypothesis 3</td>
<td>Not tested</td>
</tr>
<tr>
<td>Hypothesis 3a</td>
<td>Supported for the Honor Ideology of Men and Honor Questionnaire</td>
</tr>
<tr>
<td></td>
<td>Not supported for the Honor Ideology of Women and Honor Concerns scale</td>
</tr>
</tbody>
</table>
Chapter IX: Study 1 Discussion

Previous studies that have examined prevalence of cyberbullying behaviors (CBBs) using definitional measures generally report low rates, ranging from 8 – 9% (MacDonald & Roberts-Pittman, 2010; Slonje & Smith, 2008). The current study found perpetration rates near 50%, however. One possible reason for the observed discrepancy is in how the behavior is measured. Both MacDonald and Roberts-Pittman (2010) and Slonje and Smith (2008) presented a definition, and then asked respondents to self-classify as either cyberbullies or noncyberbullies. This approach has been advocated by Olweus (2012), a leading researcher in bullying behaviors. Importantly, focus groups have reported that most college students associate the term ‘cyberbullying’ with adolescent behaviors (Baldasare et al., 2012) or as negative in general (Kert et al., 2010). These associations are likely to depress overall reported rates, especially when participants are asked to self-classify (Baldasare et al., 2012; Kert et al., 2010; Kowalski et al., 2014; Ybarra et al., 2012). In the current study, participants were asked to self-report engaging in a series of behaviors that have been linked to the term ‘cyberbully’ (Calvete et al., 2010; Gibb & Devereux, 2014) as well as an additional four behaviors not included in the original measures, following the recommendation of Kowalski et al. (2014) and others studying traditional bullying behaviors (Kert et al., 2010; Menesini, Modena, & Tani, 2009).

Studies that utilize a behavioral checklist may over report the behavior, however, as many do not also measure the distinguishing characteristics associated with cyberbullying (Kowalski et al., 2014; Olweus, 2012; Tokunaga, 2010). In the current study, participants reported engaging in multiple different cyberbullying behaviors, and
that they engaged in these behaviors frequently. Participants also reported engaging in the
behaviors with the intent to cause distress and that they believed their behaviors would
cause distress to their targets.

Participants who reported engaging in these behaviors also reported that they
were more intelligent and more central to their social circle than their targets (Table 8.3),
similar to previous results (Merten, 2005), suggesting the existence of a perceived power
imbalance between themselves and the target. Differences in confrontation rates provide
additional support for the idea of this power imbalance. Overall, only 32% of perpetrators
reported being confronted by their target face-to-face and 38% reported being confronted
by some form of technology. In contrast, approximately 53% of targets reported
confronting the perpetrator face-to-face, and approximately 49% reported confronting the
perpetrator by some form of technology. It is likely that although targets of CBBs believe
they are confronting their attacker, the perpetrator may not identify the act as a
confrontation. The perceived differences in network centrality between the perpetrator
and the victim may increase the belief that the target is unable to deliver significant
consequences to the perpetrator, altering the perception of the confrontation.

Only a minority of individuals who engaged in CBBs reported targeting
individuals randomly. These results help to further distinguish CBBs from more general
acts of cyberaggression such as trolling. Although trolling behaviors may be targeted
towards a specific individual, it is hard to predict that that person will engage with the
attacker. It is much more likely that individuals who engage in trolling behaviors do so
randomly with the intent to watch the disruption (Buckels et al., 2014). Interestingly,
perpetrators reported targeting individuals both inside and outside of their social
networks at approximately the same rate. One reason that individuals who were outside of the perpetrator’s social network would be targeted is that they were seeking entry into the network and the perpetrators wished to keep them out. It is also possible that the perpetrators felt their status within their social networks was threatened by the new member, and engaged in behaviors designed to keep them from achieving any kind of social standing within the network.

Taken together, these results provide initial support for the idea that the behaviors measured by behavioral checklists measure cyberbullying behaviors. Perpetrators reported engaging in CBBs repeatedly, providing support for the idea that there is at least a behavioral pattern. Perpetrators also engage in CBBs with the intent to cause distress to the target, and believe that the behaviors do cause distress to their targets. These individuals also perceive themselves as more socially powerful than their targets.

Summary of Research Questions and Hypotheses

Research Question 1: How much risk is associated with engagement in cyberbullying behaviors? The current study examined perpetrator’s perceptions of three different types of consequences: 1) confrontation by the target, 2) social consequences, and 3) institutional consequences. Perpetrators reported that they were moderately confident that they would not be confronted by their target, which corresponded with reported rates of actual confrontations. Given the observed discrepancy between the percentage of perpetrators reporting being confronted and the number of victims reporting confronting the perpetrator, it is likely that some perpetrators were confronted by their targets but did not believe it to be an actual confrontation possibly due to the existence of a power imbalance. Perpetrators also reported low rates of consequences as a
result of the behavior and perceived a low likelihood of experiencing any consequence, including being confronted by the target.

**Research Question 2: What factors are associated with engagement in cyberbullying behaviors?** Some previous factors that had been shown to be significantly predictive of engagement in CBBs were found to be nonsignificant in the current study. Gender was nonsignificant, suggesting that men and women engage in CBBs at a similar rate. This is important, as previous results have suggested that men (Calvete et al., 2010; Lapidot-Lefler & Dolev-Cohen, 2014; Slonje & Smith, 2008; Vandebosch & Van Cleemput, 2009) or women (Dilmac, 2009; Kowalski & Limber, 2007; Rivers & Noret, 2010; Sourander et al., 2010) engage in CBBs at higher rates. This nonsignificant result may also lend support to the classification of CBBs as a form of relational aggression as proposed by Li (2007), as relational aggression is typically engaged in both genders at similar rates (Björkqvist et al., 1994; Kawabata et al., 2014; Schober et al., 2009).

Despite previous studies that have suggested cyberbullying behaviors decrease with age (Chapell et al., 2004; Chapell et al., 2006; Gibb & Devereux, 2014; Kraft & Wang, 2010; Lapidot-Lefler & Dolev-Cohen, 2014; Wang et al., 2009), results of the current study suggest there is no association between age and risk of perpetrating CBBs. These results are similar to other studies that have found no link between CBBs and age (Beran & Li, 2007; Didden et al., 2009; Juvonen & Gross, 2008; Patchin & Hinduja, 2006). These nonsignificant results are supported by the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992). The theory states that individuals will engage in aggressive behaviors that match their current
skill set, and this age group has developed at least some technological ability which should not decrease with age.

The behavioral reinforcement scale was nonsignificant in the current study, although goodness of fit statistics suggested the scale be retained in the general model. In other words, behavioral reinforcement is important in predicting engagement in cyberbullying behaviors but does not predict engagement by itself. This conclusion is supported by the SIP model of aggression (Crick & Dodge, 1994) as well as the developmental theory of aggression with the model proposing that environmental reinforcement of behaviors is necessary for the continuation of those behaviors.

Similar to previous studies (Barlett & Gentile, 2012; Barlett et al., 2013), being the victim of CBBs was the highest risk factor associated with engagement in CBBs. It is possible that individuals who are the target of CBBs observe the lack of consequences associated with the behavior, thus increasing the likelihood that they will engage in the behavior themselves. This is supported by the relatively low confidence felt by participants that the behaviors would stop if the target reported the behaviors to someone else. It is also possible that individuals who have been the target of CBBs engage in the behavior as retribution to being targeted themselves. Past studies (Felmlee & Farls, 2013) suggest that individuals typically engage in CBBs in response to some perceived slight such as not responding to a text message. The high number of individuals who are both perpetrators and targets supports this idea.

Individuals who reported above average levels of sub-clinical psychopathy were more likely to engage in cyberbullying behaviors. These individuals are typically less able to determine another’s emotional state (Wai & Tillopoulos, 2012) and more likely to
report low levels of social anxiety (Lilienfeld & Andrews, 1996; D. L. Paulhus & Williams, 2002). This lowered ability to determine another’s emotional state may contribute to the lower rates of confrontation reported by perpetrators compared to the reported rates of confrontation by targets. This lowered ability coupled with lower levels of social anxiety may also translate to lower sensitivity to environmental consequences, at least partially explaining the low levels of consequences reported by perpetrators.

The final factor that was significantly associated with engagement in CBBs was positive attitudes toward cyberbullying. These positive attitudes are similar to normative beliefs regarding aggressive behaviors, attitudes that have been theorized to influence both the perception of environmental response to aggressive behavior as well as the development of possible behavioral responses (Crick & Dodge, 1994). For example, individuals that endorse aggressive normative beliefs are more likely to self-report engaging in aggressive behaviors (Boxer et al., 2013). It is likely that individuals who report that it is acceptable to send mean emails to another are more likely to do so when they perceive that that person has slighted them. The results of Study 1 support these predictions and previous results reported by Barlett and Gentile (2012), in that individuals who held supportive beliefs regarding cyberbullying were more likely to report engaging in the behavior. Similar to the impact of sub-clinical psychopathy, acceptance of normative beliefs may have colored the target’s response to the behavior, altering the perception of a confrontation between the perpetrator and target.

The full model also included several factors that were not significant and did not significantly influence the model. First, similar to previous results (Goodboy & Martin, 2015), Machiavellianism was nonsignificant, although this personality trait has been
linked to low levels of affective empathy (Wai & Tillopolos, 2012) and holding hostile attributions of intent (de Castro et al., 2002; Rauthmann, 2012; Rauthmann & Kolar, 2012). Similar to Machiavellianism, everyday sadism scores did not predict engagement in CBBs. It was expected that individuals who score high on measures of everyday sadism would be more likely to engage in CBBs, similar to results of previous studies linking the score with more general forms of cyber-aggression such as trolling (Buckels et al., 2014). The study by Buckels et al. (2014) suggested that individuals engage in these more general forms of cyberaggression as a way to entertain themselves. Similarly, Machiavellianism has been linked to proactive but not reactive forms of aggression (Fanti et al., 2008; Kerig & Stellwagen, 2010). Given the current support for the idea that CBBs may be engaged in due to the perception of a perceived slight discussed above, this may further discriminate CBBs from more general forms of cyberaggression such as trolling. Taken together, these nonsignificant results suggest that there may be a different reason behind cyberbullying behaviors, such as retribution for a perceived slight as suggested by other researchers (Femlee, 2003; König et al., 2010; Law, Shapka, Domene, et al., 2012).

The Aggression Questionnaire (Buss & Perry, 1992) was also nonsignificant in the current study and its removal did not significantly alter the model. This scale was included in order to measure individual levels of trait aggression in the current sample. In addition to the Aggression Questionnaire (Buss & Perry, 1992), three of the four included COH scales were also nonsignificant. The Honor Ideology of Men (Barnes et al., 2012) and the Honor Questionnaire (Henry, 2009) were both nonsignificant in the original model, and the removal of the scales did not significantly change the model. These results are contrary to previous studies that have linked engagement in traditional forms of
bullying with engagement in cyberbullying behaviors in adolescents (Li, 2007). However previous studies that examined college students (Archer, 2004), found that norms toward and rates of engagement in traditional forms of aggressive behaviors are significantly reduced within this population. The nonsignificant results of the current study seem to support this finding.

The final nonsignificant COH scale, the Honor Ideology of Women (Barnes et al., 2014) may have been duplicated by the COH scale that was significant, the Honor Concerns scale (Ijzerman et al., 2007). Support for this idea comes from the change in significance when only these two scales were included in the model. Both scales measured the underlying concepts of COH norms instead of both the concept and the response to the behavior, however, the Honor Concerns scale (Ijzerman et al., 2007) did so without gendered pronouns.

Overall the reduced logistic model that included both individual and cultural factors was significantly better at predicting group membership compared to the original model proposed by Gibb and Devereux (2014) that included only individual factors. This suggests that, similar to the predictions of the SIP model of aggression (Crick & Dodge, 1994), engagement in aggressive behaviors is determined by multiple facets, including those developed through exposure to cultural norms of aggression.

**Hypothesis 1: Individuals who endorse COH norms will be more likely to engage in cyberbullying behaviors than individuals who report low levels of COH.**

*Supported.* Individuals who reported high levels of COH acceptance on the Honor Concerns scale (Ijzerman et al., 2007) were more likely to also self-report engaging in cyberbullying behaviors. Previous studies reported that individuals who reported high
levels of COH acceptance are more likely to engage in aggressive behaviors when core identities are threatened (Brown et al., 2009; Henry, 2009) and also display a hyper-vigilance against threats directed at these core identities (Brown et al., 2009; Cohen & Nisbett, 1994; Cohen et al., 1996; Henry, 2009). It is likely that the low levels of perceived consequences associated with cyberbullying may increase the attractiveness of these behaviors to individuals who also hold high levels of COH acceptance. This is in line with previous results suggesting that individuals who engage in CBBs do so in response to some perceived slight (Femlee, 2003; König et al., 2010; Law, Shapka, Domene, et al., 2012).

**Hypotheses 1a & 1b:** Men / women who endorse COH norms will be more likely to engage in cyberbullying behaviors than men / women who do not endorse COH norms. *Not Supported.* Neither Hypothesis 1a nor 1b were supported. There was no significant main effect of gender, indicating that women and men reported engaging in cyberbullying behaviors at approximately the same rate. Although individuals who reported high levels of COH acceptance were more likely to engage in CBBs, this result did not vary by gender. These results are in line with other results suggesting that men and women engage in CBBs at approximately the same rate (Gibb & Devereux, 2014; Kokkinos et al., 2014; Kowalski et al., 2012; MacDonald & Roberts-Pittman, 2010; Patchin & Hinduja, 2006; P. K. Smith et al., 2008).

**Hypothesis 2:** Individuals who report high levels of COH norm acceptance will be more likely to engage in a wider range of behaviors. *Not Supported.* No measure of COH acceptance significantly predicted range of behaviors. It is likely that individuals engaged in cyberbullying behavior in an immediate response to a perceived
slight. An immediate reaction would limit their ability to engage in a wide range of possible behaviors by reducing the number of different mediums available. For example, an individual may not receive an immediate response to a text, and will send threatening text messages because they do not have access to other mediums. It is also possible that there are different reasons behind engaging in the different behaviors. For example, an individual may forward a video of someone getting hurt to others because they find the video funny, but send threatening text messages to another person because they feel the target insulted them. These mixed reasons behind engaging in CBBs may have suppressed the relationship between COH acceptance and the range of behaviors engaged in. Support for this idea can found in the overall rates of behaviors reported, with some behaviors being reported more often than others (see Table 8.4).

Research Question 3: What relationship, if any, exists between gender and the range of cyberbullying behaviors engaged in? Similar to previous results (Gibb & Devereux, 2014), men in the current study reported engaging in a wider range of behaviors compared to women. The observed difference in the range of behaviors may be associated with gender differences between direct and indirect forms of aggression. Women may have greater experience with indirect forms of aggression, often developing and implementing these aggressive behaviors during early adolescence (Cote, et al., 2007; Vaillancourt et al., 2007). It is likely that due to this increased experience, women have become comfortable specific types of indirect aggression, and use technology to engage in these behaviors. Men on the other hand are more likely to develop indirect forms of aggression later in their development (Cote et al., 2007; Rose et al., 2004; Vaillancourt et al., 2007), as well as a later decrease in acceptance of physical aggression.
(Archer, 2004; Archer et al., 2005). These changes leave room for men to utilize different types of behaviors, ultimately resulting in a wider range of behaviors engaged in. This idea is supported by the developmental theory of aggression (Bjorkqvist & Lagerspetz, et al., 1992; Bjorkqvist & Osterman, et al., 1992).

**RQ 3.1: Do normative beliefs mediate the relationship between gender and the range of behaviors engaged in?** There was a significant partial mediation of the relationship between gender and range of behaviors by normative beliefs for both men and women. This is in line with the prediction of the SIP model of aggression (Crick & Dodge, 1994), namely that individuals who hold normative beliefs accepting of aggression are more likely to generate a higher number of aggressive responses than individuals who do not hold such normative beliefs (Huesmann, 1986, 1988; Huesmann & Eron, 1984; Huesmann & Guerra, 1997). Similarly, the results of the current study suggest that the number of different cyberbullying behaviors engaged in was at least partially due to normative beliefs surrounding these behaviors.

**RQ 3.2: Does perceived behavioral support mediate the relationship between gender and the range of behaviors engaged in?** There was no significant mediation of the relationship between gender and the range of behaviors by behavioral support for either men or women. This is counter to predictions made by the SIP model of aggression (Crick & Dodge, 1994), which suggests that behaviors reinforced by the environment should make individuals more likely to engage in similar behaviors. It is likely that the both the asynchronous nature of communication by technology as well as the physical distance between the perpetrator and the target may disrupt the link between possible behavioral choices and environmental reinforcement by eliminating environmental
feedback. For example, a perpetrator may post embarrassing images of someone but not be able to see the impact those images have for several days, if at all. In contrast, embarrassing images that are posted in the real world allow the perpetrator the chance to watch the impact by allowing the perpetrator to be in the same place as the target when the images are encountered. Similarly, threatening text or email messages can be sent across a city, allowing the perpetrator relatively safety from retribution but without being able to see the reaction of the target.

**Research Questions 3.3, 3.4, 3.5:** Does perceived risk of confrontation/risk of social consequences/risk of legal consequences mediate the relationship between gender and the range of behaviors engaged in?

There was no significant mediation of the relationship between gender and the range of behaviors engaged in for the perceived risk of confrontation, perceived risk of social consequences, or perceived risk of legal consequences. These results are in line with the predictions made by both the SIP model of aggression (Crick & Dodge, 1994) and the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992). Both theories suggest that behavioral choices are limited by the perceived riskiness of the behavior. The observed lack of punishment from any source in the current study suggests that the environment does not serve this important function for cyberbullying behaviors.

Participants in the current sample were moderately confident that they would not be confronted by their targets, and reported similar rates of confidence in not experiencing social or legal consequences. These same participants also reported relatively low levels of actual confrontation, social, and institutional consequences suggesting that the
environment is ineffective in modifying behavioral choices associated with cyberbullying.

**Research Question 4: Are the proposed distinguishing characteristics of cyberbullying related to engagement in cyberbullying behaviors?** Overall there was a significant *positive* relationship between frequency of behavior, popularity, intelligence, the number of behaviors that resulted in confrontation and reported engagement in cyberbullying behaviors. This supports the idea that the behaviors utilized in the current study are being engaged repeatedly, and that the perpetrators perceive a power differential between themselves and the target of the behavior. One surprising result was the positive relationship between the number of behaviors that resulted in a confrontation and recent engagement. The findings in the aggression literature suggest that individuals who engage in reactive forms of aggression are more likely to face increased rates of victimization (Card & Little, 2006; Dodge & Coie, 1987; Poulin & Boivia, 2000). Related to the positive association with the outcome measure of recency and range, it may be that this confrontation was desired by the perpetrator and reflects the cyclical nature of perpetrator and victim.

Much of the criticism against utilizing behavioral checklists to measure cyberbullying behavior is that this method does not necessarily capture the definitional requirements of the construct (Olweus, 2012), namely repetition, intentionality, and the existence of a power imbalance favoring the perpetrator. The current study asked participants to report on these characteristics for each individual behavior they reported engaging in. Two of the three measures were significantly related to a measure of recent engagement in CBBs with individuals reporting engaging in the behavior multiple times.
more likely to report engaging in the behaviors more recently. These individuals were also more likely to report that they were more popular and intelligent than their targets. Individuals who reported engaging in CBBs more recently were also more likely to report being confronted by their target. Centrality and self-reported intended distress were not significantly related to the measure of recency and range of behaviors.

**Hypothesis 3: Individuals who grow up in areas classified as COH areas in previous studies will report elevated COH scores compared to individuals who grew up in areas classified as non-COH areas. Not tested.** As there were not enough participants from non-COH areas this hypothesis was not tested. The results of the current study suggest that participants generally reported a high level of COH acceptance as would be expected from the geographical categorization of the study site. It is likely that participants from different geographical locations will have different responses to these measures making it important that these measures are utilized in different geographical areas.

This continued utilization will serve two important functions. First, continued use will validate the measures as being able to effectively discriminate between high and low COH acceptance. Future studies should use the individual measures of COH in areas believed to be low in the construct. Second, continued use will increase the knowledge base surrounding individual measure of COH within areas typically believed to be high on this construct. COH is typically determined by the geographic location of the high school that the participant attended, making the development of an understanding how individual measures of COH map on these prior categorizations important. It is unlikely
that regions labeled as ‘high’ in COH acceptance are monolithic in their acceptance, with COH acceptance varying due to other factors not measured in the current study.

**Hypothesis 3a: Men will report higher levels of COH norm acceptance compared to women. Partially supported.** As hypothesized, men in the current study reported significantly higher levels of COH acceptance for two of the four scales, the Honor Ideology of Men (Barnes et al., 2012) and the Honor Questionnaire (Henry, 2009). Given that these scales are geared more towards physical aggression in response to a perceived slight, this is not necessarily surprising. Items on both the Honor Concerns scale (Ijzerman et al., 2007) and the Honor Ideology of Women scale (Barnes et al., 2014) are geared more towards the underlying principles of COH norms. It is likely that within COH populations, individuals accept the premises underlying COH customs, but may not endorse physical forms of aggression to meet those needs. It is also possible that gender norms regarding the acceptability of physical forms of aggression may contribute to the observed gender differences in type of aggressive behavior. As noted by Archer (2004), men typically report significantly higher levels of physical aggression, even though the overall effect size is significantly reduced for men who attend college.

**Limitations / Future Directions**

A major limitation of the current study was the lack of participants from non-COH areas of the United States. Participants in the current study did report moderately high scores on all measures, although no comparison could be made to individuals who did not grow up in COH areas. Very few studies have examined the impact of individual levels of COH acceptance, instead focusing on geographic areas to classify participants. The current study linked an individual measure of COH acceptance to engagement in
cyberbullying behavior, however, there is no support for the idea that individuals from different COH acceptance areas differ significantly on this measure. Despite this lack of divergent support, the Honor Concerns Scale (Ijzerman et al., 2007) was related to individual differences in response to an identity threat. Future studies should continue to look at individual endorsement of COH norms in order to determine if individuals from COH geographical areas truly report higher scores on these measures.

A second limitation is that the current study did not measure engagement in other types of aggressive behavior, limiting the study’s ability to determine if CBBs are engaged in at higher rates than other forms of direct or indirect aggressive behaviors in the same population. Past studies that have examined these different types of aggressive behavior in college students typically report low levels of physical forms of aggressive behavior (Archer, 2004; Archer & Coyne, 2005) but high rates of relational forms of aggression (Cote et al., 2007; Rose et al., 2004; Vaillancourt et al., 2007). Future studies should broaden the type of aggressive behaviors examined to determine if rates differ within the same population. This examination would further strengthen the assertions of both the SIP model of aggression (Crick & Dodge, 1994) and the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992) by allowing a direct comparison of physical, relational, and cyber- forms of aggressive behaviors.

The current study only examined cyberbullying behaviors within one age range. It is possible that different rates of these behaviors exist at different age ranges. It is also possible that different overall rates of cyberbullying exist at different age ranges. One factor that has been shown to influence engagement in cyberbullying behaviors is
unsupervised use of technology (P. K. Smith et al., 2008; Vandebosch & Van Cleemput, 2009). As adolescents gain unsupervised access to technology via smartphones and other personal forms of technology, it is likely that rates of cyberbullying behavior will be high in these groups as well. It is also likely that, as individuals age, they will continue to utilize technology in aggressive manners, especially if the consequences of such use remain few and relatively benign.

In addition to individuals continuing to engage in cyberbullying behaviors, it is likely that older individuals will begin to use technology in aggressive manners as well, as predicted by the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992). This model of aggression suggests that aggressive behaviors that are not effectively sanctioned by the environment will continue, and it is likely that older generations are aware of the lack of sanctions. It is likely that as older generations begin to acclimate to technological changes, they will also begin to utilize technology to engage in aggressive behaviors. Future studies should continue to examine rates of cyberbullying behavior in both younger and older cohorts to determine if rates change dependent upon the age of the participant, as well as track CBBs longitudinally. It is important to obtain this information as previous studies have suggested that rates should decline after high-school.

Similarly, the current study also only examined cyberbullying behaviors within a specific population. It is unknown at what rates these behaviors occur within age similar individuals who do not attend college. Previous studies (Archer et al., 2005) have suggested that the college experience can significantly alter norms regarding aggressive behavior, especially in men. It is reasonable to believe that individuals who do not attend
college may engage in cyberbullying behaviors at different rates than those who do attend college. The consequences of the behaviors outside of academia may also be different, however, no studies to date have examined this admittedly hard to reach population. Future studies should begin to reach out to individuals not within a traditional academic setting to determine what impact, if any, cyberbullying behaviors have, as well as at what rates these behaviors are engaged in.

Related to the previous limitation, the current study only examined COH acceptance within a population believed to be high on the measure. Results of the current study suggest that this categorization may be based on reality, however, there are several factors that may influence results that were not measured in the current study, such as socio-economic status and geographic location. Additionally, the transient nature of the state within which the study was completed may have also impacted COH acceptance. Compared to the national rate of 2.4%, Nevada reported a 4.8% increase in population due to migration from a different state (United States Census Bureau, 2015). This migration may cause cultural shifts, although the current study did control for this by asking respondents to report the zip code of the town in which they attended high school.

**Future Directions**

The current study measured several factors that may alter perceptions of confrontations between perpetrators and targets. It is possible that individuals who report high levels of sub-clinical psychopathy do not perceive a confrontation in the same manner as the target of the behavior. Compared to the person initiating the confrontation, it is possible that perpetrators perceive the interaction as either positive or non-threatening. It is important to understand the relationship between each factor and the
individual’s perceptions of confrontation. Future studies should examine what relationship, if any, exists between sub-clinical psychopathy and/or normative beliefs and perpetrators perception of being confronted.

The current study required individuals to self-report engaging in specific behaviors. It is possible that individuals under-reported their involvement with these behaviors, leading to the miss-classification of individuals as non-cyberbullies. Despite this limitation, behavioral checklists remain an important tool in understanding behaviors that are generally perceived to be negative. In addition to individuals self-censoring, it is possible that individuals engaged in some cyberbullying behaviors not asked about in the current study. Technology continues to expand at an incredible pace, and with this expansion, novel ways to engage in aggressive behaviors are also created. The current behavioral survey attempted to remain general in its scope while also targeting behaviors that are media specific. Future studies should continue to examine behavioral patterns that utilize novel forms of technology to determine if new behaviors should be added to inventories.

Related to the range of cyberbully behaviors, it is possible that individuals will only engage in CBBs that they feel comfortable with or have an opportunity to engage in. For example, in order to gain access to an individual’s social network or email account the perpetrator would need to somehow guess or otherwise know the target’s password, a task that requires a great deal of skill or time. However, it is significantly easier to text or email threatening messages or images to a target or post someone’s secrets online. It is also possible that CBBs are engaged in during times of distress associated with an action of the target. If this is the case, then only those technologies that are readily available to
the perpetrator may be used to engage in the behaviors. None of these possible limits were explored in the current study and so could not be controlled for. Future studies should begin to examine the technical ability of respondents to gain a greater understanding of the limitations of the range of cyberbullying behaviors.

The current study presents some support for the idea that the environment is currently unable to effectively mediate behavioral choices of individuals who engage in cyberbullying behaviors. It is important to note, however, that the lack of an observed effect does not indicate that there is no mediation occurring. It is possible that the sample was drawn from individuals who have yet to experience any significant consequences as a result of their behaviors. Future studies should continue to probe for a mediation effect between the perception of risk associated with engaging in cyberbullying behaviors and the range of behaviors an individual engages in. These studies should also examine what, if any, impact these risk factors have on engagement of cyberbullying behaviors.

Examination of engagement in cyberbullying behaviors across different time periods, such as the ones utilized in the current study, should continue to be examined. It is also important to examine the behaviors over longer periods of time to determine if existing sanctions are effective in reducing CBB engagement.

As cyberbullying research continues to move forward, it is also important to include the voices of the targets of these behaviors. Studies on cyberbullying behaviors typically focus on the perpetrators, and the current study is no exception. Studies that focus on the victims will help determine what difference, if any, exists in the amount of actual experienced distress between cyberbullying behaviors. Funds for cyberbullying amelioration are likely to be limited, this clarification will help focus both prevention and
victim counseling services to those behaviors that cause the most distress. These studies may also be able to identify groups that are more likely to experience cyberbullying, allowing for a more directed message.

The current study did not overtly ask participants to identify a reason for engaging in CBBs. Due to this, the study is only able to speculate about possible reasons for engaging in the behaviors in question. Previous studies that utilized adolescent samples (Felmlee & Farls, 2013; König et al., 2010; Law, Shapka, Hymel, et al., 2012) have suggested that CBBs are engaged in due to a perceived slight, such as not responding to a text message within the expected time period. One way to begin to resolve this question is to examine behavioral responses to perceived slights. Studies should be conducted that include an actual behavioral measure to determine what, if any, link exists between exposure to cyberbullying behaviors and actual engagement in similar behaviors. Study 2 was designed to test this.
Chapter X: Study 2 Pilot

In the first study, some participants reported actively excluding another person in online groups. This type of cyberbullying is similar to ostracism behaviors observed in the real world. One of the most common ways to simulate ostracism is through the Cyberball paradigm (K. D. Williams & Jarvis, 2006; K. D. Williams, Yeager, & Cheung, 2012). In this paradigm, participants engage with up to three additional players in a ball toss simulation who either include the participants by throwing them the ball or ostracize participants by failing to throw the ball to them, typically after a short inclusion period. The paradigm has been deployed with the participant being brought into a lab (van Beest, Williams, & Van Dijk, 2011; Warburton, Williams, & Cairns, 2006a), however, the paradigm has been successfully utilized in completely online samples (K. D. Williams, Cheung, et al., 2000; Wolf et al., 2015; Wölfer & Scheithauer, 2013). Across one large study (n = 1,486) as well as a second smaller study (n = 231), K. D. Williams, Cheung, et al. (2000) reported that individuals who completed the Cyberball paradigm online and were ostracized reported similar impacts to their need to affiliate, need for control, and self-esteem. K. D. Williams, Cheung, et al. (2000) also reported that individuals who were ostracized online engaged in behaviors similar to those who had been ostracized in a lab setting by increasing their conformity to perceived group norms.

More recently, Cyberball has also been used as a dependent measure of online group inclusion (Nozaki & Koyasu, 2013; Wölfer & Scheithauer, 2013) as well as a measure of forgiveness (Dorn et al., 2013). These studies found that individuals who had been previously ostracized were more likely to ostracize the offending party by choosing the throw the ball to a novel participant or against a virtual wall. Nozaki and Koyasu
(2013) reported that participants with low levels of emotional control were more likely to engage in ostracism behavior within the paradigm. The number of studies that utilize Cyberball are still limited, and typically utilize the paradigm within a lab setting. The pilot study examined the feasibility of using the Cyberball paradigm as a dependent variable with a different sample, as well as the impact of using the paradigm completely online.
Chapter XI: Study 2 Pilot Method

Participants / Materials

**Demographic survey.** Participants were asked to supply basic demographic information such as age, gender, race/ethnicity, class rank, sexual orientation, an estimate of the amount of time spent using online services, and an estimate of time spent using personal electronics. Participants were also asked to select from one of three icons to represent themselves in the Cyberball game.

**In-Person Focus Groups.** Participants were recruited for 4 separate in-person focus groups. Although 18 individuals signed up for the groups, a total of 12 participants showed up for the sessions (Session 1 n = 3; Session 2 n = 3; Session 3 n = 2; Session 4 = 4). The mean age of the participants was 22.92 (SD = 9.66). The sample was White (50%; n = 6), male (75%, n = 9), heterosexual (83.3%, n = 10), and where either seniors (50%; n = 6) or freshmen (33.3%; n = 4). Most of the participants indicated that they spent approximately 1 – 3 hours per day utilizing some form of social networking site (50%; n = 6) and between 7 – 9 hours per day utilizing personal forms of technology (33.3%; n = 4). All participants completed the study online in a computer lab located on campus. Nine of the 12 participants completed all games including the final game.

Participants were verbally reminded of the cover story that they would complete two online ball toss games with participants from other universities. Participants were then instructed to log in to the online survey software to complete the study. After completion, the experimenter asked follow-up questions, including questions designed to assess the believability of the cover story that others were participating with them. All
participants were asked to complete a standard follow-up questionnaire related to the Cyberball paradigm (Zadro et al., 2006; Zadro et al., 2004).

**Online Focus Group.** Twenty-four participants signed up for and interacted in some way with the online study designed to examine the impact of completing the Cyberball manipulation online. The mean age of participants in this sample was 20.83 (SD = 2.96). The sample was White (60.9%; n = 14), female (60.9%; n = 14), heterosexual (91.3%; n = 21). A majority of participants indicated either junior (39.1%; n = 9) or senior (34.8%, n = 8) class status. All participants completed the study in a location and time of their choosing. Eleven participants completed all of the games and measures. Participants who completed the measures online filled out the same materials as the in-person study.

Participants in both the in-person and online focus groups were randomly assigned to either an ostracism or inclusion condition following an A-B-A design utilizing randomization provided by the survey manager.

**Cyberball 4.0.** All participants completed a version of the Cyberball paradigm (K. D. Williams & Jarvis, 2006) that had been modified to run in HTML5 for increased accessibility (K. D. Williams et al., 2012). The Cyberball paradigm (K. D. Williams & Jarvis, 2006) simulates the ball-toss game used in initial ostracism research. The paradigm allows researchers to set several different parameters, including the total number of throws, whether or not a participant will be ostracized by the game, and the number of throws a participant receives before being ostracized. For the current study, participants engaged in 3 games and completed a total of 30 throws per game. In all games the participant was Player 2.
Participants in both the inclusion and exclusion condition first engaged in an initial game where they were included and received approximately 33% of the throws. After the initial game, participants were randomly assigned to be either included or excluded. All participants engaged with the same partners in the second game, with the only difference being participants who were assigned to the inclusion condition receiving approximately 33% of the throws and participants who were assigned to the exclusion condition receiving only one throw from each of the confederates before being excluded for the remainder of the game.

After completing the second game, participants completed a final game. As both players in the initial game ostracized the participant, a novel player that replaced one of the offending players was introduced in the final game. Following the design of Nozaki and Koyasu (2013), Player 1 always threw the ball to the participant, and Player 3 randomly alternated between the participant and Player 1. All games lasted no more than 3 minutes each.

**Cyberball follow-up survey.** Participants completed the Cyberball follow-up survey after both the second and third games (Zadro et al., 2006; Zadro et al., 2004). The survey includes questions regarding perceptions of inclusion (I felt disconnected), self-esteem (I felt good about myself), sense of control (I felt powerful) and ostracism (I was ignored). These questions were answered on a 5-point Likert type scale from 1 (Not at all) to 5 (Extremely). The survey also included questions regarding feelings experienced during the game (Good/Bad; Friendly/Unfriendly). These questions were answered using a slider that recorded values from 1 to 5.
Suspicion probe. Participants also completed a measure of confidence regarding the game that asked how confident they were that they had interacted with real people in each game. These questions were answered on a 7-point Likert type scale from 1 (No Confidence) to 7 (Absolutely confident). Participants were also asked to report any suspicions regarding the protocol.
Chapter XI: Study 2 Pilot Results

**In-person format**

Participants in the first focus group indicated that they did not believe the computer lab of the study influenced the believability of the paradigm. However, some participants stated that the sudden change from inclusion to exclusion was suspicious. Participants in the second focus group indicated that the location did influence the believability of the paradigm, noting that the small number of participants who were present in the room made them suspicious about interacting with others. Participants in the third and fourth focus groups noted that some aspects of the paradigm were suspicious, including the location. These participants indicated that the cover story of real players was implausible due to the low number of participants in the room.

The scales were scored such that higher scores indicated more threat to the need measured. For all scales, participants in the ostracism condition reported higher scores, indicating higher perceived threat to all needs measured (belonging, connection, control, and self-esteem; see Table 11.1). This is consistent with previous research suggesting that ostracism increases these needs. Examining only those participants who completed all games (n = 9), the mean confidence that they were interacting with other people for the first game was moderate ($M_{Confidence} = 3.00, SD = 1.77$) and was slightly higher for the final game ($M_{Confidence} = 4.33, SD = 2.18$).

Table 11.1

*Mean and Standard Deviation of Cyberball Follow-Up Survey Items by Focus Group*

<table>
<thead>
<tr>
<th></th>
<th>Belonging</th>
<th>Connection</th>
<th>Sense of Control</th>
<th>Self-Esteem</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Person</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Inclusion  |  2.33 (1.36) |  2.20 (.99) |  2.97 (.85) |  2.07 (.77)  
Ostracism |  3.37 (1.41) |  3.60 (1.26) |  3.53 (.73) |  2.83 (1.01)  

Online

Inclusion  |  2.45 (.88)  |  2.63 (1.03) |  3.02 (.39) |  2.42 (.76)  
Ostracism |  3.36 (.89)  |  3.09 (.93)  |  3.19 (.49) |  3.15 (.95)  

**Online format**

Similar to the in-person focus group, participants in the ostracism condition reported higher levels of threat to the need to belong, need for connection, and self-esteem. The mean for need for control was only slightly higher, however (see Table 11.1). Examining only those participants who completed all games (n = 11), the mean confidence for interacting with other people for the first game was slightly higher than the in-person group ($M_{Confidence} = 3.43$, $SD = 2.37$) and the mean confidence for the final game was higher as well ($M_{Confidence} = 4.25$, $SD = 2.96$), although these differences were not significant.

To determine if significant differences existed between the methods of administration, a Kolmogorov-Smirnov Z test was selected as sample sizes for the focus groups were low. There was no significant difference for any of the needs or in reported believability between the methods of administration (all $p$’s > .38). Overall, these results indicate that the online and in-person administrations of the study were similar in the impact experienced by participants. As there was no significant difference in the believability between the two methods of administration, the groups were combined in the next analysis.
In order to determine if a behavioral change had occurred between the inclusion and ostracism groups, a throw ratio for the final game was computed for the novel player by taking the number of throws to the novel player (Player 1) after receiving the ball from Player 1 divided by the total number of catches from Player 1, similar to the technique used by Nozaki and Koyasu (2013).

Figure 11.1  Formula for Calculation of Throw Ratio.

\[
\text{Throw Ratio} = \frac{\text{Number of throws to Player 1 after Receiving the Ball from Player 1}}{\text{Total Catches from Player 1}}
\]

Nozaki and Koyasu (2013) linked this ratio to the intention to throw the ball to the non-ostracizing participant, thus excluding the ostracizing participant. This intentional exclusion of the original player (Player 3) is the aggressive behavior.

For the inclusion condition, the mean number of throws to Player 1 after receiving the ball from them was 2.44 (SD = 3.54) with a throw ratio of .17 (SD = .16). For the exclusion condition, the mean number of throws to Player 1 after receiving the ball from them was 4.73 (SD = 3.88), with a throw ratio of .24 (SD = .19) indicating that these participants were more likely to throw to the novel player after being excluded (see Table 11.2 for full throw ratio). These results are similar to results reported by Nosaki and Koyasu (2013), who reported that individuals who had been ostracized were less likely to include Player 3 than individuals who had not been ostracized.

Table 11.2

<table>
<thead>
<tr>
<th>Mean and Standard Deviation of Throw Ratio by Condition – Final Game</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Number of Return Throws to Player 1</td>
</tr>
<tr>
<td>Inclusion</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Exclusion</td>
</tr>
</tbody>
</table>

*Note.* Player 1 is a novel confederate. Total number of possible throws = 26.

Text analysis of the written comments and of the sentiments expressed in the in-person questionnaire indicated that the sudden shift between inclusion and exclusion led to the majority of suspicions (n = 4, 80%). Only two participants indicated that they held suspicion regarding the probability of others’ completing the study at the same time.
Chapter XII: Study 2 Pilot Discussion

Participants who had been ostracized were less likely to include the returning player in a second game of Cyberball (K. D. Williams & Jarvis, 2006; K. D. Williams et al., 2012), similar to the results published by Nozaki and Koyasu (2013). Also of note, participants who completed the protocol completely online experienced similar reductions in self-reported self-esteem, sense of belonging, and sense of connection. Participants were also similar in their ratings of confidence regarding the story that they were engaging with another student across the games in both the in-person and online protocols. Support for using the Cyberball (K. D. Williams & Jarvis, 2006; K. D. Williams et al., 2012) paradigm as a behavioral measure was drawn from both previous studies (Dorn et al., 2013; Nozaki & Koyasu, 2013; Wölfer & Scheithauer, 2013) as well as the results of the pilot study. As there was no significant difference between the methods of administration for either the measured outcomes or the behavioral outcome, it was decided that administration would be done online to maximize external validity. To address concerns regarding the shift between inclusion and ostracism games, the initial two games were combined. Participants in the ostracism condition received 10 throws from the other players and then were ostracized for the remainder of the game, whereas participants in the inclusion condition received approximately equal throws in both games.
Chapter XIII: Study 2 Overview

Study 2 sought to emulate a realistic cyberrealm interaction by utilizing online ostracism (i.e., exclusion from an online group; Calvete et al., 2010; Gibb & Devereux, 2014; Willard, 2007) in an attempt to study CBBs within a semi-controlled environment. Ostracism (K. D. Williams, 2007a, 2007b) has been linked to both increased affiliative behaviors (Gonsalkorale & Williams, 2007; Over & Carpenter, 2009) and increased aggressive behaviors (Twenge et al., 2001; Warburton et al., 2006b). Research has also suggested that excluding someone from an online group (e.g., a chat room) ultimately leads to feelings of social rejection (K. D. Williams, Bernieri, et al., 2000; K. D. Williams et al., 2002) similar to exclusion from other real world social activities (Gonsalkorale & Williams, 2007; van Beest & Williams, 2006; K. D. Williams, 2007a, 2007b). Studies examining the impact of ostracism have noted that witnessing others engaging in a social activity without the ability to engage in the activity also produces feelings of social exclusion, including reducing reported self-esteem and feelings of belongingness (Zadro et al., 2004).

Currently there is no behavioral support for the observed link between exposure to cyberbullying behaviors and future engagement in CBB, although there exists strong correlational evidence suggesting that past experience with cyberbullying behaviors (as either victim or perpetrator) is linked to engagement (Barlett & Gentile, 2012). Indeed, the results of Study 1 suggested that victims of cyberbullying behavior were approximately 12 times more likely to engage in the behavior themselves, a result that replicated findings from previous studies (Barlett & Gentile, 2012). Results of Study 1 also suggest that exclusion from an online group is one of the more common forms of
cyberbullying behaviors engaged in by both men and women. Study 2 was proposed as a way to monitor this specific CBB, while also examining individual responses to the same CBB.

It is of interest to determine if individuals who report never engaging in cyberbullying behaviors will engage in cyberbullying behaviors after they themselves were the target (RQ 1, see Table 13.1). Additionally, it is expected that participants who are ostracized by group members and who reported engaging in cyberbullying behaviors in the past will be more likely to engage in online ostracism by not including individuals from a previous game. Specifically, it is believed that individuals who have self-identified as engaging in cyberbullying behaviors and have been excluded from an online group will be more likely to exclude returning members compared to similar individuals who were not ostracized (Hypothesis 1, see Table 13.1).

It is also of interest to explore whether a link between the effects of ostracism and acceptance of COH norms exists. The link between ostracism and general aggressive behaviors has been established previously with ostracized individuals more likely to engage in aggressive behaviors toward the ostracizer (Twenge et al., 2001; Warburton et al., 2006). Ostracism has also been found to threaten individuals’ self-esteem, feelings of belongingness, sense of control, and feelings of meaningful existence (Zadro et al., 2004); needs that are typically associated with culture of honor norms. It is expected that individuals who self-report engaging in cyberaggressive behaviors and are ostracized will report higher levels of acceptance on an individual measure of COH norms than individuals who self-reported engaging in cyberaggressive behaviors and are not ostracized (Hypothesis 2, see Table 13.1).
Table 13.1

*Study 2 Research Questions and Hypotheses*

<table>
<thead>
<tr>
<th>Research Question 1</th>
<th>Does exposure to cyberbullying behaviors increase the risk of engagement in similar behaviors?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis 1</strong></td>
<td>Individuals who self-identified as engaging in cyberbullying behaviors and have been excluded from an online group will be more likely to exclude the same group member (measured in terms of tossing a ball to the member) compared to individuals who self-identified as engaging in cyberbullying behaviors and were not excluded from an online group</td>
</tr>
<tr>
<td><strong>Hypothesis 2</strong></td>
<td>Individuals who self-reported engaging in cyberbullying behaviors and have been ostracized will report high levels of culture of honor norm acceptance compared to individuals who self-reported engaging in cyberbullying behaviors and were not ostracized</td>
</tr>
</tbody>
</table>
Chapter XIV: Study 2 Method

Participants / Procedure

Initial power analysis utilizing G*Power (Faul et al., 2009; Faul et al., 2007) indicated that approximately 129 participants would be needed to detect a medium effect size. Undergraduate and graduate students (n = 238; $M_{Age} = 20.93, SE = .24$) at a Western university who did not participate in Study 1 were asked to participate in an online perception study seeking to determine if personality traits could be ascertained via non-verbal communication and completed an online behavioral experiment via the university’s SONA participation program. A majority of participants (n = 143, 60.3%) were female. The sample was overwhelmingly White (n = 159, 73.6%) or Hispanic (n = 26, 12.0%), and heterosexual (n = 223, 94.5%). The sample was split almost evenly between Republicans (n = 63, 26.8%), Democrats (n = 68, 28.9%), or Unsure/Unknown (n = 59, 25.1%). Full demographic information is presented in Table 14.1.

Table 14.1

Demographic Information – Study 2

<table>
<thead>
<tr>
<th>Gender</th>
<th>N (%)</th>
<th>Ethnicity</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>94 (39.7%)</td>
<td>White (Non-Hispanic)</td>
<td>159 (66.8%)</td>
</tr>
<tr>
<td>Female</td>
<td>143 (60.3%)</td>
<td>African American</td>
<td>8 (3.4%)</td>
</tr>
<tr>
<td>Class</td>
<td></td>
<td>Hispanic</td>
<td>26 (10.9%)</td>
</tr>
<tr>
<td>freshman</td>
<td>54 (22.8%)</td>
<td>Asian American</td>
<td>17 (7.1%)</td>
</tr>
<tr>
<td>Sophomore</td>
<td>25 (10.5%)</td>
<td>Pacific Islander</td>
<td>1 (0.1%)</td>
</tr>
<tr>
<td>Junior</td>
<td>78 (32.9%)</td>
<td>Other</td>
<td>5 (2.1%)</td>
</tr>
<tr>
<td>Senior</td>
<td>73 (30.8%)</td>
<td>Multi-Ethnic</td>
<td>20 (8.7%)</td>
</tr>
<tr>
<td></td>
<td>Graduate (%)</td>
<td>Political Ideology</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------</td>
<td>------------------------------</td>
<td></td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>223 (94.5%)</td>
<td>Republican 63 (26.8%)</td>
<td></td>
</tr>
<tr>
<td>LGB</td>
<td>11 (4.4%)</td>
<td>Democrat 68 (28.9%)</td>
<td></td>
</tr>
<tr>
<td>Unsure / Unknown</td>
<td>2 (.8%)</td>
<td>Unsure / Unknown 26 (25.1%)</td>
<td></td>
</tr>
</tbody>
</table>

Time Spent on Social Networking

<table>
<thead>
<tr>
<th>Time Spent</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 Hour</td>
<td>63 (27.4%)</td>
</tr>
<tr>
<td>1 – 3 Hours</td>
<td>115 (50.0%)</td>
</tr>
<tr>
<td>4 – 6 Hours</td>
<td>38 (16.5%)</td>
</tr>
<tr>
<td>&gt; 12 Hours</td>
<td>2 (.9%)</td>
</tr>
</tbody>
</table>

Time Spent Using Personal Technology

<table>
<thead>
<tr>
<th>Time Spent</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 Hour</td>
<td>4 (1.7%)</td>
</tr>
<tr>
<td>1 – 3 Hours</td>
<td>49 (21.3%)</td>
</tr>
<tr>
<td>4 – 6 Hours</td>
<td>112 (48.7%)</td>
</tr>
<tr>
<td>&gt; 12 Hours</td>
<td>5 (2.2%)</td>
</tr>
</tbody>
</table>

All participants completed the CBQ-B and CBQ-V after agreeing to participate in the study. Next, participants were randomly assigned using an A-B-A design by the survey software to either complete the behavioral follow-up questions first or complete the Cyberball paradigm first. This randomization resulted in an approximate 1 / 3 split due to some participants reporting not engaging in or being the target of any of the behaviors included in the current study, with 33% (n = 79) completing the Cyberball paradigm first, 30% (n = 72) completing the Cyberball paradigm second, and 37% (n = 87) completing only the Cyberball paradigm.
Within the Cyberball paradigm, participants were also randomly assigned using an A-B-A design to either an ostracism or inclusion system by the survey software and were asked to pay attention to the play style of the avatars in order to determine the interaction partner’s personality characteristics following the study’s cover story. Participants who were assigned to the ostracism condition were actively ignored after an initial series of tosses whereas participants who were assigned to the inclusion condition received approximately 1/3 of the tosses. Participants completed measures commonly associated with the Cyberball paradigm described below. After completing these measures, participants were asked to complete a final game of Cyberball. The second game informed the participant that only one of their former group members had re-connected (indicated by the same colored icon) so a new partner had been randomly assigned (indicated by a novel colored icon). Similar to the method used in the pilot study and Nozaki and Koyasu (2013), all participants received all throws from the novel participant, and randomly received throws from the returning participant. The games lasted no longer than 5 minutes. The randomization resulted in an approximate 50/50 split, with 49.1% (n = 115) of participants assigned to the inclusion condition, and 50.9% (n = 119) assigned to the ostracism condition. Online ostracism is measured in the current study as the ratio of completed passes to a novel participant after receiving the ball from that participant, similar to the methodology utilized in the pilot study described above and by Nozaki and Koyasu (2013) and Wölfer and Scheithauer (2013).

Finally, all participants completed the COH measures, the cyberbullying attitude questionnaire and the behavioral reinforcement measure from Study 1. As the
cyberbullying attitude questionnaire and behavioral reinforcement measures were not specifically indicated in any hypotheses, these scales are not described below.

**Materials**

**Cyberball 4.0.** This game is typically used in research regarding the effects of social ostracism (K. D. Williams & Jarvis, 2006) but has been modified by the original programming team to allow embedding into online survey software (K. D. Williams et al., 2012). In the current study, the game involves three avatars represented by colored icons. Two of the avatars were controlled by the computer, and were pre-programmed to either include the participant or exclude the participant. The third avatar is controlled by the participant.

**Cyberball follow-up survey.** Participants completed the standard follow-up survey to Cyberball after the initial game (Zadro et al., 2006; Zadro et al., 2004). This survey includes questions regarding inclusion (I felt disconnected), self-esteem (I felt good about myself), sense of control (I felt powerful), general feelings (Good, Bad), and a direct measure of ostracism (I was ignored). Questions were answered on a 5-point Likert type scale. Participants were asked to estimate how many times they received throws during the initial game.

The following materials were the same as used in Study 1:

**Demographic survey.**

**Revised cyberbullying behavior questionnaire (RCBQ-B).**

**Revised CBQ-B Follow-up.** Participants who indicated that they had engaged in any of the behaviors were asked to also complete the behavior specific follow-up questions.
Revised cyberbullying victim questionnaire (RCBQ-V).

Revised CBQ-V Follow up. Participants who indicated that they were the victim of any of the behaviors were asked to also complete the behavior specific follow-up questions.

Short Dark Triad (SD3) – Psychopathy subscale. Participants completed the Short Dark Triad (D. N. Jones & Paulhus, 2014).

Culture of Honor Questionnaires. Participants completed the same COH scales as described in Study 1. The scales included the Honor Concerns Scale (HCS; Ijzerman et al., 2007), the Honor Ideology for Women scale (Barnes et al., 2014), the Honor Ideology for Manhood scale (Barnes et al., 2012), and the Culture of Honor questionnaire (Henry, 2009).
Chapter XV: Study 2 Results

Summary Statistics

Approximately 47.1% (n = 112) of participants reported engaging in at least one behavior classified as cyberbullying. A slightly higher percentage (n = 117, 50.9%) reported being the target of at least one cyberbullying behavior (CBB). Similar to previous studies, less than half of participants (n = 95, 39.9%) reported having no experience with CBBs. A small percentage (n = 31, 13.0%) of participants reported only being the target of CBBs and a similar number (n = 26, 10.9%) reported only being the perpetrator of CBBs. A higher percentage (n = 86, 36.1%) reported being both the target and perpetrator of CBBs. To allow for comparison to previous studies, a restricted sample was developed for the current study that excluded freshmen. Similar to previous studies, only age ($p < .001$) significantly differed between the two samples (see Table 15.1). As there was no important differences between freshmen and the rest of the sample, all results utilize the full sample.

Table 15.1

Comparison of Demographic Factors Between Freshmen and Other Classes

<table>
<thead>
<tr>
<th></th>
<th>Freshman</th>
<th>Other Classes</th>
<th>Freshman</th>
<th>Other Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence: Game1</td>
<td>2.70 (1.94)</td>
<td>2.61 (1.80)</td>
<td>4.00 (1.94)</td>
<td>3.70 (2.25)</td>
</tr>
<tr>
<td>Age***</td>
<td>18.67 (.58)</td>
<td>21.69 (3.75)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Republican</td>
<td></td>
<td>11 (20.8%)</td>
<td>52 (28.6%)</td>
</tr>
<tr>
<td>Male</td>
<td>24 (44.4%)</td>
<td>70 (38.3%)</td>
<td>17 (32.1%)</td>
<td>51 (28.0%)</td>
</tr>
<tr>
<td>Female</td>
<td>30 (55.6%)</td>
<td>113 (61.7%)</td>
<td>10 (18.9%)</td>
<td>35 (19.2%)</td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td>Unsure / Unknown</td>
<td>15 (28.3%)</td>
<td>44 (24.2%)</td>
<td></td>
</tr>
</tbody>
</table>
As it is possible that answering questions about CBB behaviors may influence willingness to engage in ostracism behavior, participants were randomly assigned to first complete either the Cyberball paradigm (K. D. Williams et al., 2012) or answer the specific CBB follow-up conditions in an A-B-A design. To determine if order of completion impacted the throw ratio outcome, a one-way ANOVA was conducted with the throw ratio as the dependent variable and condition specific page path as the independent variable. The throw ratio for the final game was calculated using the same formula utilized in the pilot study. Specifically, the number of throws to the novel player (Player 1) after receiving the ball from Player 1 was divided by the total number of catches from Player 1. As some participants (n = 87) did not complete the behavior specific follow-up questions, three groups were identified: 1) Cyberball first, cyberbullying behavioral follow-up questions second, 2) cyberbullying behavioral follow-up first, Cyberball second, and 3) Cyberball only.

For the inclusion condition, Levene’s test was significant (p = .003), so the Browne-Forsythe corrected results are reported. There was no significant difference
between the groups ($F (2, 103.79) = 1.41, p = .25$) suggesting that the order of completion did not have an impact on the throw ratio for the inclusion condition. For the ostracism condition, Levene’s test was nonsignificant ($p = .27$), so the uncorrected results are reported. Similar to the inclusion condition, there was no significant difference between the groups ($F (2, 118) = .86, p = .43$). Means and standard deviations for all groups are presented in Table 15.2. As order of completion did not result in a significant difference in the throw ratio, page order was collapsed between the two conditions.

Table 15.2

*Means and Standard Deviations for Throw Ratio by Page Path / Experimental Condition*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inclusion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyberball Only</td>
<td>43</td>
<td>.31 (.31)</td>
</tr>
<tr>
<td>Cyberball First</td>
<td>40</td>
<td>.21 (.20)</td>
</tr>
<tr>
<td>Cyberball Second</td>
<td>34</td>
<td>.27 (.25)</td>
</tr>
<tr>
<td><strong>Ostracism</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyberball Only</td>
<td>44</td>
<td>.20 (.18)</td>
</tr>
<tr>
<td>Cyberball First</td>
<td>39</td>
<td>.25 (.22)</td>
</tr>
<tr>
<td>Cyberball Second</td>
<td>38</td>
<td>.24 (.16)</td>
</tr>
</tbody>
</table>

*Note. *p < .05. **p < .01. ***p < .001.*

Overall, participants reported a low level of confidence ($M = 2.63, SE = .12$) that they had interacted with real people during the first game but a higher level of confidence ($M = 3.76, SE = .14$) in the second game. To test whether confidence was associated with experimental condition, multiple independent samples-t tests were conducted with self-reported confidence for each game, and scores on the need for belonging, need for
meaningful existence, need for control, self-esteem, feelings of being ignored, and feelings of being excluded scales as the dependent variable and experimental condition as the grouping variable. Alpha was set to .025 to account for multiple t-tests.

Levene’s test was significant for the first game \((p < .001)\) but not for the second \((p = .38)\), so adjusted values are reported for the first game only. For the first game, participants in the ostracism condition \((M = 1.97, SE = .19)\) reported significantly lower confidence than participants in the inclusion condition \((M = 3.31, SE = .17; t (217.65) = 6.21, p < .001)\). There was also a significant difference in the mean reported confidence for the second game between the inclusion condition \((M = 3.42, SE = .19)\) and the ostracism condition \((M = 4.10, SE = .20; t (235) = 2.41, p = .02)\) although the means were not in the expected direction. Given the significant differences observed, self-reported confidence scores for each condition were entered separately in the regression equation to control for the observed difference.

**Manipulation Check**

To determine if the Cyberball manipulation had been effective in increasing need affiliations, the mean Cyberball follow-up survey subscale (Zadro et al., 2006; Zadro et al., 2004) scores between the inclusion and ostracism conditions were analyzed using independent samples-t tests (alpha was corrected to .0039 using the Bonferroni method). Levene’s test was nonsignificant \((p > .09)\) for the need to belong, self-esteem, need for meaningful existence, need for control, feelings of being ignored, and feelings of being excluded subscales. Overall, there was a significant difference in all measures included in the Cyberball follow-up survey and all means were in the expected direction. Full results are given in Table 15.3. These suggest that participants in the ostracism condition
experienced significant threats to their sense of belonging, their self-esteem, their sense of a meaningful existence, and their sense of control. These participants also reported feeling ignored and excluded by the other participants. Despite the low level of confidence associated with the ostracism condition, individuals in the ostracism condition reported experiencing the same negative consequences reported in ostracism studies.

Table 15.3

*Means and Standard Error for Cyberball Follow-up Questions by Experimental Condition*

<table>
<thead>
<tr>
<th></th>
<th>Inclusion M (SE)</th>
<th>Ostracism M (SE)</th>
<th>t-value (df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence : Game 1</td>
<td>3.31 (.17)</td>
<td>1.97 (.13)</td>
<td>6.21 (217.65)***</td>
</tr>
<tr>
<td>Confidence : Game 2</td>
<td>3.42 (.19)</td>
<td>4.10 (.20)</td>
<td>-2.41 (235)*</td>
</tr>
<tr>
<td>Need to Belong</td>
<td>3.82 (.08)</td>
<td>1.94 (.08)</td>
<td>16.46 (236)***</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>3.58 (.08)</td>
<td>2.42 (.08)</td>
<td>10.08 (236)***</td>
</tr>
<tr>
<td>Need for Meaningful Existence</td>
<td>3.86 (.08)</td>
<td>2.30 (.09)</td>
<td>13.37 (236)***</td>
</tr>
<tr>
<td>Sense for Control</td>
<td>3.07 (.07)</td>
<td>1.82 (.06)</td>
<td>13.42 (236)***</td>
</tr>
<tr>
<td>I was ignored.</td>
<td>1.64 (.09)</td>
<td>4.30 (.11)</td>
<td>-18.18 (233)***</td>
</tr>
<tr>
<td>I was excluded.</td>
<td>1.63 (.09)</td>
<td>4.26 (.11)</td>
<td>-18.13 (233)***</td>
</tr>
<tr>
<td>Mean Number of Tosses</td>
<td>30.85 (.81)</td>
<td>9.27 (.59)</td>
<td>21.68 (229)***</td>
</tr>
</tbody>
</table>

* *p < .05. **p < .01. ***p < .001.

**Development of Model of Predictors of Engagement in Ostracism Behavior**

Mean throw ratio by condition and cyberbully status is reported in Table 2.8.

Levene’s test was significant (p < .001), so the corrected results are reported.
Table 15.4

*Means and Standard Deviations for Throw Ratio to Non-Ostracizing Player by Experimental Condition / Cyberbully Status (n = 235)*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inclusion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyberbully Non-Perpetrator</td>
<td>65</td>
<td>.26 (.29)</td>
</tr>
<tr>
<td>Cyberbully Perpetrator</td>
<td>51</td>
<td>.27 (.22)</td>
</tr>
<tr>
<td><strong>Ostracism</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyberbully Non-Perpetrator</td>
<td>61</td>
<td>.21 (.17)</td>
</tr>
<tr>
<td>Cyberbully Perpetrator</td>
<td>58</td>
<td>.26 (.20)</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.

Initial examination of the data indicated that the throw ratio was negatively skewed (see Appendix D, Figure 1), as well as non-normal, with both the Shapiro-Wilk (*p < .001*) and the Kolmogorov-Smirnov (*p < .001*) normality tests significant. Examination of the Q-Q plots also showed deviation from normality (Appendix D; Figure 2). Elimination of observed outliers identified via boxplot did not significantly impact the observed distribution of the sample (Appendix D; Figure 4 and Figure 5). The sample also showed a significant number of zeroes. For these reasons, both a negative binomial regression and a zero-inflated negative binomial regression were calculated.

As negative binomial models require whole integers as the dependent variable, the ratio score was transformed by multiplying all scores by 100 and fixing the number to 0 decimal points, rounding up to the next whole integer at .5. The independent variables included the experimental condition (ostracism = 1), self-reported confidence scores from Game 1 and Game 2, age, sub-clinical psychopathy, bully status (bully = 1), victim status
(victim = 1), and the hypothesized interactions between bully status / experimental condition, and between victim status / experimental condition. In addition to the hypothesized interaction, the interaction between sub-clinical psychopathy and experimental condition was also included as previous results (Nozaki & Koyasu, 2013) suggested that this interaction should be significant. All continuous measures were mean centered to increase ease of interpretation. The negative binomial model was run using the MASS package (Venables & Ripley, 2002) in the R framework (R Development Core Team, 2016) “Supposedly Educational” (R Ver. 3.3.0). Overall, examination of the dispersion parameter indicated that the negative binomial did not fit the data well ($\chi^2(190) = 244.47, p = .005$; see Table 15.5). One possible reason for this over-dispersion is the high number of zeroes present in the data.

Table 15.5

*Negative Binomial Model Predicting Percentage of Throws to Novel Player*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>b (SE)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant***</td>
<td>3.64</td>
<td>28.91</td>
</tr>
<tr>
<td>Experimental Condition</td>
<td>-.30</td>
<td>.45</td>
</tr>
<tr>
<td>Ostracism = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victim Status</td>
<td>-.33</td>
<td>.39</td>
</tr>
<tr>
<td>Positive = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bully Status</td>
<td>.26</td>
<td>.69</td>
</tr>
<tr>
<td>Positive = 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.008</td>
<td>.97</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>Psychopathy</td>
<td>.03</td>
<td>.68</td>
</tr>
<tr>
<td>Experimental Condition x Bully Status</td>
<td>.07</td>
<td>.46</td>
</tr>
<tr>
<td>Experimental Condition x Victim Status</td>
<td>.21</td>
<td>.53</td>
</tr>
<tr>
<td>Experimental Condition x Psychopathy</td>
<td>-.07</td>
<td>.55</td>
</tr>
</tbody>
</table>

2*Log Likelihood = -1694.75  AIC = 1718.8

*p < .05. **p < .01. ***p < .001.

To account for these data points, a zero-inflated negative binomial was computed. The percentage of throws returned to Player 1 (the novel confederate) after receiving the ball from Player 1 was retained as the dependent variable. The zero-inflated model was run using the pscl package (Jackman, 2015) with the zero-inflation regression model (Zeileis, Kleiber, & Jackman, 2008) in the R framework (R Development Core Team, 2016) “Supposedly Educational” (R Ver. 3.3.0). Zeroes in the current data suggest a high level of integration of the returning confederate as each throw to the participant after receiving the ball from the novel player was thrown to the returning player. To model these zeroes, factors believed to influence the number of throws to the returning player were entered, specifically the experimental condition (ostracism = 1), self-reported bully status (bully = 1), self-reported victim status (victim = 1), and self-reported confidence scores from Game 1 and Game 2. To model the count data, the independent variables entered in the negative binomial model described above were maintained. As the negative binomial model and the zero-inflated negative binomial model are not nested, the Vuong (Vuong, 1989) test for model selection was utilized. The Vuong test indicated that the reduced zero-inflated model fit the data significantly better than the reduced negative
binomial model ($p < .001$; see Table 15.6 for complete Vuong results, including AIC and BIC corrected models). As such, the results of the zero-inflated negative binomial are reported and interpreted below. A log-likelihood test also suggested that the full model was better than a null model ($\chi^2(15) = 209.57, p < .001$) at describing the data.

Table 15.6

**Vuong Test (Vuong, 1989) Comparing Negative Binomial with Zero-Inflated Negative Binomial Model**

<table>
<thead>
<tr>
<th></th>
<th>Vuong z-Statistic</th>
<th>H_A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw</td>
<td>-5.84***</td>
<td>Model 2 &gt; Model 1</td>
</tr>
<tr>
<td>AIC Corrected</td>
<td>-4.96***</td>
<td>Model 2 &gt; Model 1</td>
</tr>
<tr>
<td>BIC Corrected</td>
<td>-3.69***</td>
<td>Model 2 &gt; Model 1</td>
</tr>
</tbody>
</table>

*Note.* Model 1 = Negative Binomial Model. Model 2 = Zero-inflated Binomial Model.

***$p < .001$.***

Exponentiated betas and 95% confidence intervals were computed using 2000 iterations in the boot package (Canty & Ripley, 2016; Davison & Hinkley, 1997) in the R framework (R Development Core Team, 2016) “Supposedly Educational” (Ver. 3.3.0). The Bca confidence intervals and full model information is presented in Table 15.7. For the zero model, individuals in the ostracism condition were approximately 64% less likely ($\exp\beta = .36, 95\% \text{ CI [.20, .65]}$) to exclusively throw the ball back to the returning player after receiving the ball from the novel player. Neither of the confidence measures or cyberbully status were significant.

For the count model, there was a significant main effect of experimental condition ($\exp\beta = .64, 95\% \text{ CI [.46, .89]}$), suggesting that, compared to individuals who had not
been ostracized, individuals who had been ostracized were less likely to favor the novel player over the returning (ostracizing) player. Both the main effect of mean centered psychopathy and the confidence measures were nonsignificant and relatively weak, with beta’s close to 1. The main effect for bully status (expβ = .89) was also nonsignificant (see Table 15.7 for complete model information). The interaction between sub-clinical psychopathy and experimental condition (expβ = 1.00) was also nonsignificant and weak, contrary to previous results (Nozaki & Koyasu, 2013). The interaction between bully status and ostracism was also nonsignificant (expβ = 1.38, 95% CI [.89, 2.09]), although beta was in the expected direction.

Table 15.7

Zero-Inflated Negative Binomial Model Predicting Throws to Novel Player

<table>
<thead>
<tr>
<th></th>
<th>b</th>
<th>Lower 95%</th>
<th>expβ</th>
<th>Upper 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Count Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.71</td>
<td>41.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Condition (Ostracism = 1)**</td>
<td>-.53</td>
<td>.42</td>
<td>.59</td>
<td>.84</td>
</tr>
<tr>
<td>Age</td>
<td>-.001</td>
<td>.95</td>
<td>1.00</td>
<td>1.02</td>
</tr>
<tr>
<td>Confidence Game 1</td>
<td>-.007</td>
<td>.93</td>
<td>.99</td>
<td>1.06</td>
</tr>
<tr>
<td>Confidence Game 2</td>
<td>-.004</td>
<td>.95</td>
<td>1.00</td>
<td>1.06</td>
</tr>
<tr>
<td>Bully Status (Bully = 1)</td>
<td>.19</td>
<td>.72</td>
<td>1.21</td>
<td>1.85</td>
</tr>
<tr>
<td>Victim Status (Victim = 1)</td>
<td>-.43</td>
<td>.42</td>
<td>.65</td>
<td>1.07</td>
</tr>
<tr>
<td>Subclinical Psychopathy Score</td>
<td>.02</td>
<td>.75</td>
<td>1.02</td>
<td>1.36</td>
</tr>
<tr>
<td>Experimental Condition x Bully Status</td>
<td>.06</td>
<td>.63</td>
<td>1.06</td>
<td>1.96</td>
</tr>
<tr>
<td>Experimental Condition x Victim Status</td>
<td>.39</td>
<td>.79</td>
<td>1.48</td>
<td>2.51</td>
</tr>
</tbody>
</table>
### RQ 1: Does exposure to cyberbullying behaviors increase the risk of engagement in similar behaviors?

The incident risk associated with engaging in a cyberbullying behavior after being ostracized was reduced, with individuals who had been ostracized 41% less likely to favor the novel player over the returning (ostracizing) player. Although nonsignificant, individuals who self-reported engaging in cyberbullying behaviors and victims of cyberbullying behaviors were slightly more likely to favor the novel player over the returning player for both when they were ostracized.

**Hypothesis 1: Individuals who self-identified as engaging in cyberbullying behaviors and have been excluded from an online group will be more likely to exclude the same group member (measured in terms of tossing a ball to the member) compared to individuals who self-identified as engaging in cyberbullying behaviors and were not excluded from an online group.** Although individuals who reported engaging in cyberbullying behaviors also demonstrated higher throw rates to the

<table>
<thead>
<tr>
<th>Experimental Condition x Psychopathy</th>
<th>-.03</th>
<th>.60</th>
<th>.97</th>
<th>1.41</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Zero Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept**</td>
<td>-1.03</td>
<td>2.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Condition (Ostracism = 1)*</td>
<td>-.94</td>
<td>.18</td>
<td>.36</td>
<td>.70</td>
</tr>
<tr>
<td>Confidence Game 1</td>
<td>-.03</td>
<td>.15</td>
<td>.39</td>
<td>1.07</td>
</tr>
<tr>
<td>Confidence Game 2</td>
<td>.08</td>
<td>.77</td>
<td>.97</td>
<td>1.23</td>
</tr>
<tr>
<td>Bully Status (Bully = 1)</td>
<td>-.36</td>
<td>.91</td>
<td>1.09</td>
<td>1.32</td>
</tr>
<tr>
<td>Victim Status (Victim = 1)</td>
<td>.07</td>
<td>.26</td>
<td>.70</td>
<td>1.84</td>
</tr>
</tbody>
</table>

$2\times\log\text{Likelihood} = -794.1$ 18 DF

*Note.* Victim and bully status are not exclusive. *$p < .05$.** $p < .01$. ***$p < .001$.**
novel participant (Table 15.4) the overall mean difference was nonsignificant ($p = .24$).

Similar to this result, the incident risk ratio for the interaction effect was nonsignificant.

Hypothesis 1 was not supported, although the hypothesized interaction was in the expected direction, with ostracized individuals who reported engaging in cyberbullying behaviors more likely to throw to the novel player compared to the returning player.

**Moderation of COH Acceptance**

Drawing from the results of Study 1, the Honor Concerns scale developed by Ijzerman et al. (2007) was chosen as the dependent variable because it was significant in that study. An initial univariate ANOVA was computed to determine if there was a significant difference in mean Honor Concern scale score between the experimental groups (see Table 15.8 for means and standard errors). Levene’s test was nonsignificant ($p = .67$), so the uncorrected totals are reported. There was a significant overall difference ($F (5, 229) = 2.48, p < .03$) between experimental groups. Bonferroni corrected pairwise comparisons indicated that individuals in the Cyberball Only / Ostracism condition ($M = 6.42, SE = .23$) reported significantly higher COH acceptance than individuals in the Cyberball Second / Ostracism condition ($M = 5.40, SE = .24; p = .03$). No other pairwise comparisons were significant (see Table 15.8 for complete comparison results) so all results are collapsed within experimental group.

Table 15.8

*Means and Standard Errors of the Honor Concerns Scale by Experimental Condition*

<table>
<thead>
<tr>
<th>Experimental Condition</th>
<th>Lower 95% CI</th>
<th>Mean (SE)</th>
<th>Upper 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyberball Only / Inclusion$^{a,b}$</td>
<td>5.24</td>
<td>5.68 (.22)</td>
<td>6.12</td>
</tr>
<tr>
<td>Condition</td>
<td>Mean</td>
<td>SD (df)</td>
<td>Median</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>Cyberball Only / Ostracism</td>
<td>5.97</td>
<td>6.42 (.23)</td>
<td>6.87</td>
</tr>
<tr>
<td>Cyberball 1st / Inclusion</td>
<td>5.58</td>
<td>6.04 (.24)</td>
<td>6.50</td>
</tr>
<tr>
<td>Cyberball 1st / Ostracism</td>
<td>5.64</td>
<td>6.10 (.24)</td>
<td>6.56</td>
</tr>
<tr>
<td>Cyberball 2nd / Inclusion</td>
<td>5.19</td>
<td>5.68 (.25)</td>
<td>6.18</td>
</tr>
<tr>
<td>Cyberball 2nd / Ostracism</td>
<td>4.93</td>
<td>5.40 (.24)</td>
<td>5.87</td>
</tr>
</tbody>
</table>

*Note.* Superscripts differ at *p* < .05.

An independent samples t-test was also computed comparing mean COH acceptance between perpetrators and non-perpetrators. Levene’s test was nonsignificant (*p* = .94). There was no significant difference between perpetrators (*M* = 5.75, *SE* = .14) and non-perpetrators (*M* = 6.02, *SE* = .13; *p* = .16) on self-reported COH scores.

The independent variables included in the moderation model were experimental condition (ostracism = 1), and self-reported cyberbully status (Bully = 1). Examination of the dependent variable showed a significant Shapiro-Wilk test (*p* = .002). Despite this significance, measures of skewness (-.17, *SE* = .16) and kurtosis (.18, *SE* = .32), as well as the Q-Q plot (Appendix E, Figure 2) and histogram (Appendix E, Figure 1) suggested that the dependent variable was approximately normally distributed. Examination of the generated Box plots indicated three potential outliers. Removal of these cases did not change the results of the Shapiro-Wilk test (*p* = .003), although both the histogram (Appendix D, Figure 4) and Q-Q plots (Appendix D, Figure 5) indicated a slight improvement. Skewness was reduced (.022, *SE* = .16) although kurtosis was reversed (-.11, *SE* = .32). These cases were retained in the analyses.

Three cases were removed due to missing values, however, no cases were removed due to violations of normality (SR > 3.0 or Mahalanobis Distance > 18.47, Cook’s D > .018, and Leverage > .043) leaving a final sample of 235. The moderation
model was run using the PROCESS macro (Hayes, 2015) in SPSS 23. The overall model was significant ($R^2 = .03, p = .03$). The interaction between self-reported cyberbully status and experimental condition was significant ($b = -.84, p = .03$; Table 15.9).

Examination of simple effects indicated that there was a significant effect of bully status for non-perpetrators, such that those individuals who had been ostracized reported higher COH acceptance than participants who had been included ($p = .02$; Table 15.10 and Figure 15.1.). There was no significant difference in mean COH acceptance scores for individuals who self-reported engaging in previous cyberbullying behaviors ($p = .42$).

Table 15.9

*Interaction Between Experimental Condition and Bully Status*

<table>
<thead>
<tr>
<th></th>
<th>Lower 95% CI</th>
<th>b</th>
<th>SE</th>
<th>Upper 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>5.35</td>
<td>5.74</td>
<td>.18</td>
<td>6.12</td>
</tr>
<tr>
<td>Experimental Condition*</td>
<td>.09</td>
<td>.60</td>
<td>.27</td>
<td>1.11</td>
</tr>
<tr>
<td>Bully Status (Bully = 1)</td>
<td>-.43</td>
<td>.14</td>
<td>.28</td>
<td>.71</td>
</tr>
<tr>
<td>Interaction*</td>
<td>-1.61</td>
<td>-.84</td>
<td>.39</td>
<td>-.07</td>
</tr>
</tbody>
</table>

*Note. $R^2 = .03$. *$p < .05$. **$p < .01$. ***$p < .001$.*

Table 15.10

*Interaction Between Experimental Condition and Bully Status – Simple Effects*

<table>
<thead>
<tr>
<th></th>
<th>Lower 95% CI</th>
<th>Effect</th>
<th>SE</th>
<th>Upper 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bully Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Perpetrator*</td>
<td>.09</td>
<td>.60</td>
<td>.26</td>
<td>1.11</td>
</tr>
<tr>
<td>Perpetrator</td>
<td>-.82</td>
<td>-.24</td>
<td>.29</td>
<td>.34</td>
</tr>
</tbody>
</table>

*$p < .05$. **$p < .01$. ***$p < .001$.*
Hypothesis 2: Individuals who self-reported engaging in cyberbullying behaviors and have been ostracized will report high levels of culture of honor norm acceptance compared to individuals who self-reported engaging in cyberbullying behaviors and were not excluded. The interaction between experimental condition and self-reported cyberbully status was nonsignificant for perpetrators (Table 15.10; Figure 15.1). Hypothesis 2 was not supported. There was a significant interaction between experimental condition and self-reported cyberbully status for non-bullies, such that ostracized participants reported significantly higher levels of COH acceptance.
Table 15.11

Summary of Findings – Study 2

<table>
<thead>
<tr>
<th>Research Question/Hypothesis</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ 1</td>
<td>Exposure to a CBB did not increase the risk of engaging in a similar CBB, with ostracized participants 41% less likely to favor the novel participant over the returning (ostracizing) player</td>
</tr>
<tr>
<td>Hypothesis 1</td>
<td>Not supported</td>
</tr>
<tr>
<td>Hypothesis 2</td>
<td>Not supported</td>
</tr>
</tbody>
</table>
Chapter XVI: Study 2 Discussion

Overview

Similar to both Study 1 and previous studies (Gibb & Devereux, 2014), a significant minority of participants reported engaging in at least one measured cyberbullying behavior (CBB), with a similar percentage reporting being the target of at least one CBB. These results lend more support to the idea that CBBs continue into college. The current study examined one specific cyberbullying behavior, exclusion from online groups, by asking participants to engage in two sessions of an online ball toss game (Cyberball; K. D. Williams & Jarvis, 2006; K. D. Williams et al., 2012). Through random assignment, approximately half of participants were excluded in the first game and the other half of participants were included in the ball toss game. There was no significant impact of order of presentation of the study questions.

As part of a manipulation check, participants were asked to estimate how many throws they received. Compared with participants who had been included, participants who were excluded reported a significantly lower number of tosses received. Participants who were excluded reported a significantly lower sense of belonging, sense of control, sense of meaningful existence, and self-esteem than participants who had been included (Table 15.3). The excluded participants were also more likely to report feeling excluded and ignored than the participants in the inclusion condition, similar to previous results that utilized the same paradigm (Zadro et al., 2006; Zadro et al., 2004). Participants in the exclusion condition also reported lower confidence that they had interacted with real people in the first, but not second, game.
Research Question 1: Does exposure to cyberbullying behaviors increase the risk of engagement in similar behaviors? The results of the count model suggested individuals who had been ostracized were less likely to throw the ball to the novel participant (RQ1). No such difference was observed in the inclusion group, suggesting that participants favored the returning (ostracizing) player, but only if they had been ostracized. The results of the zero model indicated that individuals who had been ostracized were less likely to fully include the returning player than individuals who had been included. These results are contrary to previous results showing individuals who had been ostracized threw the ball to a novel player at a higher rate than a returning player (Nozaki & Koyasu, 2013). These results are in line, however, with other research suggesting individuals engage in pro-affiliative behaviors in an attempt to re-establish social connections (Carter-Sowell et al., 2008; Ouwerkerk et al., 2005; Riva et al., 2014; K. D. Williams, Cheung, et al., 2000).

Pro-affiliative behaviors range from increased compliance to group norms (Ouwerkerk et al., 2005), increased conformity (Riva et al., 2014), as well as displaying an increased sensitivity to social cues (Carter-Sowell et al., 2008). Dorn et al. (2013) reported that individuals were more likely to send the initial ball to the person who had ostracized them, as well as send the ball to the ostracizer at an increased rate compared to novel players. Wölfer and Scheithauer (2013) also reported that some participants chose not to interact aggressively players who had ostracized them, and instead decided to throw the ball to the other participants in a normal manner, compared with others who chose to throw the ball either aggressively or against a wall.
Although significant and supported by some studies, the results of RQ 1 are in contrast with other studies that have shown individuals who are ostracized are more likely to engage in aggressive behaviors. Longitudinal studies have shown that individuals who were the target of cyberbullying behaviors were more likely to report engaging in the behaviors at a later time (Barlett & Gentile, 2012; Barlett et al., 2013) and other results show that positive victim status is a leading predictor of engagement in CBBs (Barlett & Gentile, 2012; Barlett et al., 2013). The results of RQ 1 that showed individuals were less likely to favor the novel player over the returning (ostracizing) player. It is likely that only some individuals may be at increased risk of engaging in cyberbullying behaviors, and that these individuals share personality characteristics with individuals who already engage in the behaviors.

This idea is supported by other studies that have examined ostracizing behaviors in response to being ostracized. Nozaki and Koyasu (2013) reported that participants with low levels of emotional regulation, compared with individuals who reported high levels of emotional regulation, were more likely to ostracize those who had ostracized them. Wölfer and Scheithauer (2013) also reported that individuals who had low levels of anger control skills, compared with individuals who reported high levels of these skills, were more likely to respond in an aggressive manner to being ostracized. In addition to this result, Wölfer and Scheithauer (2013) also reported these individuals were more likely to hold a hostile attribution of intent. Also supportive of this idea are results from previous studies reporting that individuals who score high on measures of sub-clinical psychopathy are more likely to engage in cyberbullying behaviors.
Hypothesis 1: Individuals who report engaging in previous acts of cyberbullying will be more likely to ostracize others after being ostracized themselves. Not supported. The interaction term for individuals who engaged in any of the cyberbullying behaviors measured in the current study who had been ostracized was nonsignificant. Although this interaction was nonsignificant, the observed incident risk ratio was in the expected direction with perpetrators more likely to favor the novel player over the returning (ostracizing) player, similar to results reported by Nozaki and Koyasu (2013). These results are also supported by previous studies finding individuals who had been ostracized are more likely to engage in aggressive behaviors. Generally, individuals increase the volume of a noise blast delivered to someone who has ostracized them (Warburton et al., 2006b), allocate less money for work completed by someone who has ostracized them (Maner et al., 2007), and allocate more hot sauce to someone who has a reported aversion to spicy foods (Yeager et al., 2013).

There are several possibilities for the observed nonsignificant results described above. First, the current study included two single-item measures of how confident the participant was that they had interacted with real people during the games. Although the mean confidence for the second game was moderate for both conditions, mean confidence for the initial ostracism game was lower than the mean confidence reported by participants in the inclusion condition. Despite past research suggesting that individuals who are ostracized experience negative outcomes regardless of the identity of the ostracizer (Gonsalkorale & Williams, 2007) or pre-experimental knowledge that the ostracizers are fictitious (Zadro et al., 2004), it is possible that the low confidence in interacting with real people may have impacted the results. This explanation is countered,
however, by the significant differences observed between individuals who had been ostracized and those who had been included for measures of feelings of belonging, self-esteem, feelings of meaningful existence, and sense of control, with ostracized individuals reporting lower scores on all of the measures. This explanation is also countered by the more moderate level of confidence reported by both the inclusion and ostracism groups for the second game, as well as the nonsignificant nature of both measures of confidence in the current models.

It is also possible that the design changes made between the pilot study and the experimental phase may have altered results. In the pilot study, participants completed three games, similar to the procedure utilized by Nozaki and Koyasu (2013). The first game was billed as an ‘introduction’ to the game but also served as a way to develop bonds between the players. The experimental manipulation was the second game, and the final game served as the behavioral measure. In the experimental phase, the first game was combined with the second game, reducing the number of games to 2, similar in procedure to Dorn et al. (2013) and Wölfer and Scheithauer (2013). This was done in response to comments made by participants in the pilot-ostracism condition that noted the drastic change in behavior of the other players between the first and second games. It is possible that this ‘drastic’ change may have been driving the observed results of the pilot study, namely the higher throw ratios observed in the ostracism group.

These differing results also suggest that cyberbullying behaviors are typically targeted towards individuals within an individual’s social circle, broadly defined. Participants in the pilot study may have felt a greater connection between themselves and the other players due to the initial game. Although all participants who were eventually
ostracized received the same number of initial throws, the break between games may have influenced participant expectations. It is possible that being fully included in the first game may have generated an expectation that they would be included in all subsequent games. Participants in the experimental condition were included only in the initial phase of Game 1, and then subsequently excluded. It is likely that this change, although noticeable by the participants, did not generate the same level of inclusion expectations. Future studies should begin to examine the expectations of participants after each game to gain a better understanding of these results.

**Hypothesis 2: Individuals who were ostracized and self-reported engaging in cyberbullying behaviors will report more acceptance of COH norms. Not Supported.**

The interaction between experimental condition and positive perpetrator status was not significant. There was, however, a significant interaction between experimental condition and individuals who reported not engaging in CBBs. Individuals who had been ostracized but who reported not engaging in CBBs also reported higher levels of COH acceptance compared to non-perpetrators who had not been ostracized. The results of the zero-inflated negative binomial model may help to explain this result. Although nonsignificant, the model suggests that perpetrators who were ostracized were more likely to favor the novel player over the returning (ostracizing) player, engaging in an aggressive act against the returning player. This aggressive behavior may have been enough to restore a sense of honor to the participant, decreasing salience of COH norms by countering the perceived threat to the individual. The study by Cohen et al. (1996) gives some support to this idea.
In their study, Cohen et al. (1996) found that Southerners who had been insulted also had increased levels of testosterone and cortisol. The researchers hypothesized that this increase was due to preparation to engage in some form of overt aggressive behavior. It is possible that levels of these hormones would decrease if the individual was given the opportunity to counter the perceived threat to their identity. Indeed, a majority of COH studies, including the current study, either classify participants based on geographical location or measure COH acceptance after the insulting event. No study to the author’s knowledge has measured individual acceptance of COH norms both before an insult and after the expression of an aggressive behavior, such as forcing the target to consume spicy food or endure an unpleasant noise blast. It is possible that engagement in aggressive behavior reduces the perception of threat associated with COH acceptance (Henry, 2009; Nisbett, 1993).

Limitations

A significant limitation of the current study is the number of participants recruited for the study. It is likely that the analysis for Hypothesis 1 and Research Question 1 was under-powered. Power estimates for zero-inflated negative binomial models with a binary covariate in the zero model, similar to the model used in the current study, suggest that to achieve a power of .8, approximately 464 cases are needed (Doyle, 2009). The decision to gather data from the number of participants in the current study was made assuming that a linear regression could be utilized. This type of analysis was supported by previous researchers who used ANOVA’s to examine their data (Dorn et al., 2013; Nozaki & Koyasu, 2013; Wölfer & Scheithauer, 2013). The data collected for the current study showed a non-normal distribution, resulting in the change of analysis plans. Future
studies should take note of the non-normal distribution of data and alter data collection parameters accordingly by including more participants to account for the increased complexity of statistical models.

Another limitation to the current study is that it only examined a single type of cyberbullying behavior, although the behavior measured was among the most common types reported in Study 1. This limits the current study in several ways. First, results from Study 1 suggest that individuals typically engage in multiple forms of CBBs. It is possible that, given a different form of CBB, the results may have changed. Second, individuals were restricted to engaging in the specific type of CBB featured in the current study. It is possible that given the opportunity, some participants may have engaged in a different form of CBB against the players. Related to this limitation, individuals were only exposed to a single act of ostracism. It is possible that multiple instances of cyberbullying behavior need to be experienced in order for a person to change their beliefs regarding the behavior. Future studies should expand on this study by examining other common CBBs, and allowing participants to engage in other CBBs in response. These studies should also examine the role of being exposed to CBBs multiple times. These studies would also address a third limitation of the current study by allowing for the examination of the causal link between CBB victimization and CBB perpetration.

Similar to Study 1, the current study is limited in its ability to compare individuals who report high levels of COH acceptance with individuals who report low levels of COH acceptance. This comparison is important for several reasons. First, the interaction effect in the current study was limited to individuals who reported they did not engage in CBBs, with these individuals reporting higher COH acceptance than individuals who had
not been ostracized. Inclusion of individuals who report low levels of COH acceptance would allow for a better explanation for why these individuals reported higher acceptance levels.

Study 2 is also limited by the fact that only a single behavioral option was available to participants. It is possible that participants who had been ostracized may have engaged in a different type of cyberbullying behavior if they had been given the chance. This study necessarily limited behavioral options in order to better study individual responses to a specific cyberbullying behavior (ostracism from an online group). Future studies should expand the behavioral options available to participants, possibly including an online texting option as well as the ability to engage in different types of the game. For example, some studies on ostracism have changed the Cyberball paradigm to a Cyberbomb (van Beest & Williams, 2006; van Beest, et al., 2011) paradigm, where inclusion is ‘hazardous’ to the player’s health. It may be that individuals who have been ostracized are more likely to choose to engage in such a game on the chance that the other participants would be ‘harmed’ by excluding them.

The design of Study 2 was altered in response to participants in the pilot study stating the shift between Game 1 and Game 2 was abrupt. It is possible that this design change may have altered the results seen in the Study 2 by disguising the shift between inclusion and ostracism. In Study 2, participants who were ostracized completed 10 throws and then were ostracized for the rest of the game. It is possible that the participants did not develop a group identity during those initial tosses, and thus the impact of being ostracized may have been muted. Future studies should continue to examine the behavioral consequences of ostracism across different experimental designs.
Finally, the type of ostracism utilized in the current study was semi-artificial. The ball toss paradigm utilized in the current study has been successfully used by other researchers to influence feelings of inclusion (K. D. Williams, 2007a; K. D. Williams, Cheung, et al., 2000; K. D. Williams et al., 2002). However, it is unlikely that individuals who participated in the current study have experienced a similar phenomenon in real-life unless they were active online game players. One way to make the experience more realistic would be to utilize other forms of online ostracism, such as the one utilized by Wolf et al. (2015). This paradigm used a format similar to other online social media sites by having the participant create a profile and then select an avatar. Active views are then used to either include or exclude the participant. This method does not have a direct behavioral component, however, and support for behavioral results after being exposed to this paradigm are also lacking. This method is relatively novel within the ostracism literature and has yet to be directly tested alongside established ostracism methodologies by other researchers (Wolf et al., 2015). Future research should begin to utilize this new methodology and confirm the behavioral results between the two manipulations.
Chapter XVII: General Discussion

As mentioned above, there is currently debate regarding the validity of using behavioral checklists to examine cyberbullying behaviors in college populations. Some researchers (Olweus, 2012) have argued against using these measures, advocating for the use of single-item definitional measures instead. One major drawback of single-item definitional measures is that these measures require individuals to self-classify as cyberbullies. Several studies have found that college students are averse to this self-classification, noting that cyberbullying is classified as both a negative identity (Kert et al., 2010) and an adolescent behavior (Baldasare et al., 2012) by college students, possibly leading to a significant underreporting of the phenomenon in this population (Baldasare et al., 2012; Kowalski et al., 2014; Ybarra et al., 2012).

One specific reason that researchers favor the single-item definitional measure is that it includes all definitional characteristics currently required for a person to be classified as a ‘cyberbully’. These characteristics include repetition, that the behavior is designed to cause distress to the target, and that a power differential favoring the perpetrator exists. In Study 1, each of these three characteristics were measured at the individual behavioral level. Results of this study indicated that the behaviors were engaged in repeatedly, with the intent to cause at least a low level of distress, and that perpetrators typically believed themselves to be more socially powerful than their targets. These results suggest that participants who reported engaging in these behaviors can be accurately classified as cyberbullies. Additional support for this idea is found in the analysis showing a significant relationship between frequency of behavior, perceived popularity, perceived intelligence, the number of confrontations experienced by the
perpetrator and a measure of recency of engagement in cyberbullying behaviors. Given these results, it is recommended that researchers follow the measurement approach used in the current studies rather than the single-item measures asking respondents to self-classify as a cyberbully.

The current study also suggested that individuals who engage in cyberbullying behaviors do so within semi-closed or closed social networks. Approximately 51% of perpetrators reported that their target was a member of their social network, and approximately 57% of victims reported that the perpetrator was a part of their social network. Interestingly, only about 2% of perpetrators reported targeting their victims randomly, with a corresponding 7% of victims reporting that they felt they had been targeted randomly. These findings suggest that there is at least some connection between the target and perpetrator.

The current study did not ascertain the reason behind the behaviors, however, and it is possible social status may play a role. For example, a person may post embarrassing pictures to a social media site in order to prevent someone from gaining acceptance within a specific social network. This idea is supported by the mean centrality ratings gathered from perpetrators, showing that perpetrators typically believed themselves to be more central to their social network than their targets. The relationship between perceived popularity and the measure of recency developed for Study 1 also supports this idea. Overall, individuals who believed they were more popular than their targets were also more likely to report engaging the behavior more recently, and/or engaged in a wider range of behaviors. Support for this idea also comes from the increased relative risk
associated for engagement in CBBs associated with acceptance of culture of honor norms (COH; Cohen & Nisbett, 1994; Nisbett, 1993).

Study 1 also included cultural measures believed to be predictive of engagement in cyberbullying behaviors, measures that have not been included in studies of cyberbullying. It was hypothesized that individuals who reported high levels of culture of honor norms (COH) would be more likely to both engage in cyberbullying behaviors, and engage in a wider range of behaviors than individuals who did not report these levels. Study 1 found that individuals who endorsed high levels of COH as measured by the Honor Concerns scale (Ijzerman et al., 2007) were more likely to report engaging in cyberbullying behaviors, but did not report engaging in a wider range of behaviors. As discussed previously, individuals who endorse COH acceptance also display traits similar to hostile attribution of intent (de Castro et al., 2002), by being hyper-vigilant to threats directed toward the self (Brown et al., 2009; Cohen & Nisbett, 1994; Cohen et al., 1996; Henry, 2009). The findings that individuals who endorse COH norms are more likely to engage in cyberbullying behaviors supports the idea that individuals who engage in cyberbullying behaviors may be reacting to some perceived slight within their environment.

COH acceptance was not, however, related to a wider range of cyberbullying behaviors. These results make some sense in light of previous results suggesting that individuals who engage in cyberbullying behaviors also report high levels of sub-clinical psychopathy (Goodboy & Martin, 2015), a personality constellation that includes high levels of impulsivity and low levels of empathy (Neuman & Hare, 2008; Neuman et al., 2007). It is unlikely that individuals who perceive a slight will shift from one medium to
the next, instead choosing to retaliate against the target by using the same medium immediately after experiencing the slight.

Results of Study 2 provide some behavioral support for these results. In Study 2, participants engaged in an online game of Cyberball (K. D. Williams & Jarvis, 2006; K. D. Williams et al., 2012) that simulated exclusion from an online group. Although nonsignificant, the interaction between experimental condition and cyberbully status suggested that cyberbullies are more likely to exclude a target that has previously excluded them. These results are in line with previous results suggesting that most cyberbullying behaviors are perpetrated by individuals who are also targets of the behavior (Barlett & Gentile, 2012; Barlett et al., 2013; Gibb & Devereux, 2014).

These results need to be taken cautiously, however, for several reasons. First, the interaction between cyberbully status and experimental condition was nonsignificant in the current study. As discussed above, this is likely due to the study analysis being underpowered. It is also important to note that participants in Study 2 did not have other behavioral options available to them, artificially limiting their ability to engage in different forms of cyberbullying. It is possible that given alternative behavioral options, individuals would have engaged in different forms of cyberbullying.

The current studies also examined cyberbullying behaviors in relation to two different theories of aggression. First, the social information processing model of aggression (SIP; Crick & Dodge, 1994) suggests that aggressive behaviors are the result of a recursive process that is heavily influenced by normative beliefs. In the current study, normative beliefs regarding cyberbullying were found to significantly predict self-reported engagement in CBBs and the range of behaviors engaged in. Normative beliefs
regarding cyberbullying also mediated the observed relationship between gender and range of behaviors for both men and women. As predicted by the SIP model of aggression (Crick & Dodge, 1994), both women and men who held normative beliefs accepting of CBBs were more likely to engage in a wider range of behaviors.

A second specification of the SIP model of aggression (Crick & Dodge, 1994) is that aggressive behaviors that have been sanctioned by the environment will be less likely to be engaged in the future. In the current study, the reported rate of perpetration, as well as the self-reported perceived risk associated with these behaviors, suggests it is likely that the environment is viewed as largely impotent in stopping cyberbullying behaviors. Several results in the current study support this claim. First, perpetrators typically reported moderate rates of confidence that they would not be confronted by the target, as well as relatively low rates of actual confrontation. Next, perpetrators reported that they were moderately confident that they would not experience any consequences as a result of their behaviors. These results were supported by the self-report of actual experienced consequences.

There was also a significant positive relationship between recent engagement in CBBs and the number of times an individual had been confronted by the target. This finding is similar to traditional forms of aggression in which individuals who engaged in reactive forms of aggression are more likely to face increased victimization rates (Card & Little, 2006; Dodge & Coie, 1987; Poulin & Boivia, 2000). It is possible that the ‘confrontation’ was a desired result of the behavior, and may have acted as a type of behavioral reinforcement. It is important to note that the measure of behavioral reinforcement included in the current studies was not significantly associated with
engagement in cyberbullying behaviors, although it was important to the model predicting engagement in CBBs. The SIP model of aggression (Crick & Dodge, 1994) suggests that normative beliefs influence perceptions of environmental response, including environmental and target responses. Perpetrators may view these responses as impotent, and being confronted by the target gives them a means to display their power to others. It is likely that the direct measure of normative beliefs included in the current model accounted for at least some of the variance associated with behavioral reinforcement, reducing its overall significance.

The developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992), was also linked to cyberbullying behavior. This theory suggests that gender differences in the rates of aggressive behaviors exist because of the type of aggression measured in the study. Supporting this idea, there were no significant differences in perpetration rates between men and women, similar to observed rates of indirect aggression within this population (Archer, 2004; Björkqvist et al., 1994; Kawabata et al., 2014; Schober et al., 2009).

Additionally, according to the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992), individuals will shift the type of aggressive behavior engaged in response to changes in their developmental abilities. Contrary to this prediction, previous studies had found age was a protective factor (Kraft & Wang, 2010; Lapidot-Lefler & Dolev-Cohen, 2014; Raskauskas & Stoltz, 2007; Tokunaga, 2010), with older populations reporting lower rates of cyberbullying behaviors. This result was not replicated in the current study, suggesting that perpetrators may have shifted their aggressive behaviors in response to changes in their ability to
utilize technology. It is important to note, however, that the current study did not measure the technical ability of participants. As most of the behaviors measured in the current study do not require any specific technical ability such as knowing HTML or being able to code a smartphone app, this is not necessarily a limitation of the study.

The developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992) was also supported by the finding that perpetrators largely believed there was no risk associated with their actions. This theory proposed that individuals will engage in aggressive behaviors within their developmental ability and that do not carry risk of negative consequences. Confirming this belief, perpetrators typically reported low rates of actual confrontations as well as social and institutional consequences. It is likely that individuals who engage in these behaviors are choosing to do so for this reason.

**Application of Findings to College Students**

College students who are the targets of cyberbullying behaviors report experiencing increased levels of anxiety, depression, and illicit drug use (Kraft & Wang, 2010; Na et al., 2015; Schenk & Fremouw, 2012; Schenk et al., 2013) and increased feelings of social isolation (Crosslin & Golman, 2014). Although similar to consequences experienced by adolescent targets of cyberbullying, the consequences experienced by college students may be increased by the disruption to social support systems experienced by students making the transition to college (Cowie et al., 2013; Tennant et al., 2015). Given these consequences, the current studies can inform cyberbullying prevention efforts in several ways.
First, accurate counts of cyberbullying behaviors need to be measured in order to track the efficacy of any program designed to reduce the behavior. As previously noted, individuals are typically reluctant to affix labels to the self that are considered to be negative (Kert et al., 2010). As many studies on cyberbullying have typically required this action, it is likely that participants in these studies significantly underreport the behavior (Kowalski et al., 2014). The current study provides support for the idea that behaviors included in the modified version of the CBQ-B (Calvete et al., 2010; Gibb & Devereux, 2014) meet the definitional characteristics needed to be classified as ‘cyberbullying’. Additionally, the CBQ-B is easily administered and modifiable to include new behaviors as technological advances make them possible.

Study 1 also provided initial results that individuals who engage in CBBs do so largely without fear of recrimination by environmental forces, despite existing institutional policies regarding the appropriate usage of campus networks. Participants who reported engaging in CBBs reported a moderate level of confidence that they would not experience any negative institutional or social consequences as a result of their behavior, and only a small percentage of participants reported actually experiencing any consequences as a result of their behavior. These results suggest that individuals who engage in these behaviors may not realize that the behaviors are against campus network usage agreements or student codes of conduct. Both the SIP model of aggression (Crick & Dodge, 1994) and the developmental theory of aggression (Björkqvist, Lagerspetz, et al., 1992; Björkqvist, Osterman, et al., 1992) propose that increased environmental sanctions are one way to reduce these behaviors. Regulations are unlikely to completely stop cyberbullying behaviors, however, as many of the behaviors can be engaged in
through the use of private networks not governed by a university. It is important that in addition to increased visibility of regulations and sanctions, other avenues for preventing CBBs are explored similar to the ones utilized for anti-sexual assault programming.

Study 1 as well as previous studies (Gibb & Devereux, 2014; Goodboy & Martin, 2015) linked sub-clinical psychopathy traits to an increased propensity to engage in CBBs. One important factor in this personality cluster are low levels of empathy (Lilienfeld & Andrews, 1996; D. L. Paulhus & Williams, 2002). In the past, interventions that have been designed to increase individual levels of empathy for both adolescents (Schultze-Krumbholz, Schultze, Zagorscak, Wölfer, & Scheithauer, 2016) and college students (Doane, Kelley, & Pearson, 2016) have been successful. In their study, Doane et al. (2016) reported that participants who completed their program reported slightly increased levels of empathy towards victims of cyberbullying. This was then linked to lower levels of actual engagement one month later in cyberbullying behaviors. Similarly, Schultze-Krumbholz et al. (2016) reported that adolescents who completed the 10-week program were less likely to engage in cyberbullying, although the study authors noted that empathy change was not related to changes in cyberbullying behaviors. In addition, it may prove fruitful to focus on the reduction of reinforcers, such as confrontation by the target, as a means of reducing cyberbullying behaviors. Similar strategies can be found in attempts to curb more general forms of cyberaggression such as trolling, with many sites advising users to “not feed the trolls” by responding to their comments.

In addition to preventing cyberbullying behaviors, interventions should also be designed for targets of CBBs. Study 1 demonstrated that the behaviors measured caused significant amounts of distress to targets of the behavior. One of the strongest predictors
of *engagement* in CBBs is past experiences with the behaviors, suggesting that one way to *prevent* these behaviors is to provide services to victims. Programs that are designed to provide supportive services, including counseling, should be developed and heavily promoted by colleges and universities. These programs could include online or text based counseling services, and at least one study found that such programs are effective in reducing the negative impacts of CBBs (Thompson, Robinson, & Smith, 2012).

**Conclusion**

As more and more teens gain access to technology, it becomes more likely that the media will be utilized in an aggressive manner. According to a recent Pew Research Center report (Lenhart, 2015), 73% of all teens have or have access to a smartphone, with ownership rates skewing toward older teens (15-17; 76%) although a majority of younger teens (13-15) also report having a smartphone. These rates suggest that teens are gaining at least some experience with personal forms of technology earlier in their development. Given these rates, it is important to understand behaviors that utilize technology (Okdie et al., 2014), including aggressive behaviors that utilize the medium. The current studies found that half of respondents reported engaging in cyberbullying behaviors, and that a similar percentage had been the target of such behaviors. It is important that both researchers and college administrators are aware of these behaviors, and take steps to reduce the behaviors as much as possible. It is also important that targets of these behaviors are given the supportive services needed to cope with these harmful events and complete their education.
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## Appendix A: Definitional Issues

### Description of Definitional Issues

<table>
<thead>
<tr>
<th>Topic</th>
<th>Issues</th>
<th>Evidence from the Literature</th>
<th>Decision / Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyberbullying: General definition</td>
<td>No clear definition of what cyberbullying is</td>
<td>Review by Tokunaga (2010) lists 9 different definitions</td>
<td>Decision: Repetition, power imbalance, and intentionality need to be measured in a study in order to call the measured behavior cyberbullying, however the existence of other possible factors unique to cyberbullying suggests that the research body is not yet well established enough to be clear on the factors that differentiate cyberbullying from other forms of cyberagression. Future studies should continue to advance the field, but be careful to not identify the behavior as cyberbullying until these definitional issues are further resolved by empirical studies.</td>
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<td></td>
<td></td>
<td>P. K. Smith et al. (2008) defines cyberbullying as an aggressive act or behavior that is carried out using electronic means by a group or individual repeatedly and over time against a victim who cannot easily defend themselves</td>
<td>Rationale: Although several different definitions exist within the literature, the inclusion of repetition, power imbalance, and intentionality (on the part of the perpetrator) have been included in an increasing number of studies examining CBB, and help distinguish the concept from general cyberaggression. However many researchers concede that there may exist other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Slonje et al. (2013) and P. K. Smith et al. (2013) suggest that, generally, cyberbullying is a systematic abuse of power that occurs through the use of information and communication technologies (ICTs).</td>
<td></td>
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</table>
included due to the influence on victim distress factors that discriminate cyber-aggressive behaviors from cyberbullying behaviors. The research body is not yet developed enough to clearly make these distinctions, however. Also problematic is the paucity of studies that have included all three measures in any form in the development of scales that attempt to measure the construct.

The general paucity of information regarding the inclusion of any of the characteristics further complicates the debate regarding the definition.

| Power imbalance: Definition | No clear definition of power imbalance within the cyberbullying literature | At least one study (Nocentini et al., 2010) suggests that power imbalance is a moot point due to the ability of the victim to defend themselves (either attack back or simply ignore the behavior/shut off the device/delete their social media account)

Some studies argue that the anonymous nature of victimization (i.e., being unsure about the identity of the perpetrator) can signify power imbalance (P. K. Smith, 2012a; Sticca & Perren, 2013).

Others suggest that a power imbalance requires the existence of a social relationship between the perpetrator and the victim (Pieschl et al., 2013; Wegge, Vandebosch, Eggermont, & Walrave, 2014).

Decision: Although the victim can conceivably defend himself or herself from the attack, several characteristics that are relevant (e.g., social status of the victim versus the social status of the perpetrator or the anonymous nature of the attack) may significantly alter the efficacy of such a defense. Indeed, in today's technologically infused world, simply disconnecting is not a valid option.

Power imbalance should be measured across social status, perception of efficacy, as well as the anonymous nature of the attack.

Rationale: While an actual power imbalance may not exist between the perpetrator and the victim, the perception of one may be related to
Repetition: Definition | No clear definition of what repetition means within the context of cyberbullying
---|---
Traditional bullying defines repetition as the occurrence of multiple behaviors over time that are directed at the same target by the same group/individual (Olweus, 1993, 1994)

Repetition is typically measured in CB research as the number of times an individual has perpetrated the behavior within a given time period (typically 2-3 months out, e.g., Doane et al., 2013)

Other researchers rely on the inclusion of the term ‘repeatedly’ in the definition provided to participants to measure the incidence of cyberbullying behaviors (e.g., MacDonald & Roberts-Pittman, 2010)

Repetition has also been characterized as a proxy variable for intended distress, with behaviors that are engaged in repeatedly expected to be intended to cause distress compared to those behaviors that are not (P. K. Smith et al., 2013)

Other studies that have utilized focus groups fail to find repetition as a necessary characteristic (Menesini et al., 2012; Spears et al., 2009)

| Decision: There is not enough evidence to suggest that repetition, as classically defined, should be considered a primary characteristic of cyberbullying behavior. It is possible that repetition is a secondary characteristic, showing a link to the characteristic ‘intention to cause distress’, however, this link remains unclear and un-examined within the literature. Although there is some preliminary evidence that individuals who engage in cyberbullying behaviors do so repeatedly over time, there is no evidence to support the claim that these behaviors target the same individual. Instead, the data suggest a pattern of behaviors by the perpetrator. The utility of this construct remains highly questionable in the ability to discriminate between cyber-aggressive behaviors and cyberbullying. Repetition is measured in the current study as a pattern of behavior, allowing the construct to be examined in line with the other distinguishing characteristics. Rationale: Several studies (Menesini et al., 2012; Spears et al.,...
have suggested that the general public does not accept the inclusion of repetition as a definitional construct. Many of the studies within the literature report general repetition (e.g., more than once in the last 2 months; Doane et al., 2013) and do not address who the target of the behaviors are. It is possible that repetition is best served as a proxy for intentionality, which potentially could be measured better by direct questioning, however, this remains unclear.

<table>
<thead>
<tr>
<th>Intentionality: Definition</th>
<th>No clear definition of what intentionality means within the cyberbullying context</th>
<th>Some studies have indicated that the perception of the victim (as opposed to the perpetrator) is more important (i.e., the victim’s perspective, and not the perpetrator’s, should determine whether or not harm was intended; Baldasare et al., 2012; Nocentini et al., 2010). This contradicts the entire body of traditional aggression literature and changes the definition of aggressive behavior however (Anderson &amp; Bushman, 2002). Other studies have found that intentionality (of the perpetrator) is important to the classification of an act as cyberbullying (Menesini et al., 2012). Complicating the matter is the removal of non-verbal cues associated CMC (Baldasare et al., 2009).</th>
</tr>
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<tr>
<td>Decision: Direct evaluation of both the perpetrator’s intention of harm as well as the victim’s perception of intention of harm as well as the experienced distress. Significant differences between the three constructs would provide evidence of characteristic difference whereas non-significant differences would suggest that measuring the measurements are similar enough to qualify as a definitional characteristic. If significant differences are observed among the three measures, then keeping intentionality of the perpetrator (to allow for continuity with previous research on aggression) but also measuring the experienced distress (of the victim; used in developing prevention and amelioration</td>
<td></td>
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</table>
Appendix B: Measures

Study 1

Demographic Survey

Age:
18
19
20
21
Other*

*Please indicate your age:

What is your sex?
Male  Female  Transgender (MtoF)  Transgender (FtoM)  I don’t identify as any gender listed

What is your year in college?
Freshman  Sophomore  Junior  Senior  Graduate Student

What is your political ideology?
Conservative (Republican)  Liberal (Democrat)  Independent  Unsure/Unknown
What is your sexual orientation?

Straight
Gay
Lesbian
Bisexual
Unsure/Unknown

What is your race/ethnicity (Please check all that apply)?
Non-Hispanic White / Caucasian
Hispanic
African American
Native American
Asian American
Other (Please specify)

Please estimate how long you spend using social networking (e.g., Facebook, Twitter) sites each day:

Please estimate how long you use personal technology (e.g., cell/smart phones, other communication devices) each day:

What is the zip code of the location where you attended high school?
Revised Cyberbullying behavior questionnaire (RCBQ-B)

Calvete et al., (2011); Gibb and Devereux (2014)

Please use the following response options when answering these questions.
Within My Time At UNR (But not within the last year); Within the last 12 months (1 year); Within last 6 months; Within the last 3 months; Within the last month; Within the last week; Never.

Perpetration Survey
Have you ever:
- Written embarrassing jokes, rumors, gossip or comments about another student online
- Sent threatening or insulting images by email
- Sent threatening or insulting messages by text message
- Posted humiliating images of other students on the Internet
- Sent links of humiliating images of someone to other people for them to see
- Sent links with rumors, gossip, etc. about another student to other people
- Hacked someone’s email and sent messages meant to embarrass them to their contacts
- Hacked someone’s social media account and posted/changed information meant to embarrass someone
- Recorded a video or took pictures of someone while a group laughed and forced them to do something humiliating or ridiculous
- Sent humiliating images of someone to other people
- Forwarded humiliating images of someone else to other people
- Recorded a video or took pictures of someone while they were hit or hurt by another person
- Sent these images of someone being hurt to other people
- Forwarded images of someone being hurt to other people
- Posted someone else’s secrets, compromising information or images, online
- Deliberately excluded someone from online groups
- Sent repeated messages that were meant to be threatening or intimidating
- Recorded a video or took pictures of someone else while they performed a sexual behavior
- Sent these sexual images of someone else to other people
- Forwarded sexual images of someone else to other people

Global Measure of Distress using the following scale

1 (No Distress)  4 (Moderate)  7 (A Lot)

Please tell us how much
General distress you intended by engaging in these behaviors
General distress you think the other person experienced as a result of these behaviors
RCBQ-B Follow Up Questions

Gibb and Devereux (2014)

(Skip pattern – question only for those who indicated engaging in the behavior above)
For the following questions, please use the following Likert type scales

1 (No Distress)                         4 (Moderate)                          7 (A Lot)

You told us that you have written embarrassing jokes, rumors, gossip or comments about another student online, which is similar to what other students at UNR have reported.
How many times have you done this within your time at UNR?
How much distress do you think this caused the targets of this behavior?
How much distress did you intend to cause the targets of this behavior?

Less Popular                        About the Same                        More Popular
Less Intelligent                    About the Same                        More Intelligent

Generally, thinking about who you have wrote embarrassing jokes, rumors or gossip online about are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who you have wrote embarrassing jokes, rumors or gossip online about are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you wrote embarrassing jokes, rumors or gossip online about someone, would you consider that person a part of your social network? (y / n / I targeted someone randomly)

( yes / no)

Thinking about the most recent instance where you wrote embarrassing jokes, rumors or gossip online about someone, were you confronted by the person it was about in the real world?
Thinking about the most recent instance where you wrote embarrassing jokes, rumors or gossip online about someone, were you confronted by the person it was about online?
Thinking about the most recent instance where you wrote embarrassing jokes, rumors or gossip online about someone, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement?)
(skip pattern: only shown if answered yes)
If yes, did you: (y/n)
Lose friendships?
Lose important social contacts?
Get contacted by school officials (professors, counselors, other administrative staff)?
Get contacted by law enforcement personnel (including university employed law enforcement personnel)?

1 (Not at All Confident)                      4 (Moderately Confident)                      7 (Very Confident)

How confident were you when you wrote the embarrassing jokes, rumors or gossip online that you would not be confronted?
How confident were you when you wrote the embarrassing jokes, rumors or gossip online that you would not experience social consequences (e.g., lose friends, lose important social connections)?
How confident were you when you wrote the embarrassing jokes, rumors or gossip online that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have sent threatening or insulting messages by email, which is similar to what other students at UNR have reported.
How many times have you done this within your time at UNR?
How much distress do you think this caused targets of this behavior?
How much distress did you intend to cause to targets of this behavior?
Generally, thinking about who you have sent threatening or insulting messages by email to, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who you have sent threatening or insulting messages by email to, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you sent threatening or insulting messages by email to someone, would you consider that person a part of your social network? (y / n / I targeted someone randomly)
Thinking about the most recent instance where you sent threatening or insulting messages by email to someone, were you confronted by the person it was about in the real world? (y/n)
Thinking about the most recent instance where you sent threatening or insulting messages by email to someone, were you confronted by the person it was about online? (y/n)
Thinking about the most recent instance where you sent threatening or insulting messages by email to someone, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)
How confident were you when you sent threatening or insulting messages by email that you would not be confronted?
How confident were you when you sent threatening or insulting messages by email to someone that you would not experience social consequences (e.g., lose friends, lose important social connections)?
How confident were you when you sent threatening or insulting messages by email to someone that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have sent threatening or insulting messages via text, which is similar to what other students at UNR have reported.

How many times have you done this within your time at UNR?
How much distress do you think this caused the targets of this behavior?
How much distress did you intend to cause to the targets of this behavior?
Generally, thinking about who you have sent threatening or insulting messages via text to, are you more popular, less popular, or about the same level of popularity as them?  
Generally, thinking about who you have sent threatening or insulting messages via text to, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you have sent threatening or insulting messages via text, would you consider that person a part of your social network? (y / n / I targeted someone randomly)
Thinking about the most recent instance where you have sent threatening or insulting messages via text, were you confronted by the person it was about in the real world? (y/n)
Thinking about the most recent instance where you have sent threatening or insulting messages via text, were you confronted by the person it was about online? (y/n)
Thinking about the most recent instance where you have sent threatening or insulting messages via text, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement?)
How confident were you when you sent threatening or insulting messages by text that you would not be confronted?
How confident were you when you have sent threatening or insulting messages via text that you would not experience social consequences (e.g., lose friends, lose important social connections)?
How confident were you when you have sent threatening or insulting messages via text that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have posted humiliating images of other students on the Internet, which is similar to what other students at UNR have reported.

How many times have you done this within your time at UNR?
How much distress do you think this caused the targets of this behavior?
How much distress did you intend to cause to the targets of this behavior?
Generally, thinking about who you have posted humiliating images on the Internet about, are you more popular, less popular, or about the same level of popularity as them?  
Generally, thinking about who you have posted humiliating images on the Internet about, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you posted humiliating images of someone else, would you consider that person a part of your social network? (y / n / I targeted someone randomly)

Thinking about the most recent instance where you posted humiliating images of someone else, were you confronted by the person it was about in the real world? (y/n)

Thinking about the most recent instance where you posted humiliating images of someone else, were you confronted by the person it was about online? (y/n)

Thinking about the most recent instance where you posted humiliating images of someone else, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)

How confident were you when posted humiliating images on the Internet that you would not be confronted?

How confident were you when you posted humiliating images of someone else that you would not experience social consequences (e.g., lose friends, lose important social connections)?

How confident were you when you posted humiliating images of someone else that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have sent links of humiliating images of someone to other people for them to see, which is similar to what other students at UNR have reported.

How many times have you done this within your time at UNR?

How much distress do you think this caused the targets of this behavior?

How much distress did you intend to cause to the targets of this behavior?

Generally, thinking about who you sent humiliating images of, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about who you sent humiliating images of, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you sent humiliating images of someone to others, would you consider that person a part of your social network? (y / n / I targeted someone randomly)

Thinking about the most recent instance where you sent humiliating images of someone to others, were you confronted by the person it was about in the real world? (y/n)

Thinking about the most recent instance where you sent humiliating images of someone to others, were you confronted by the person it was about online? (y/n)

Thinking about the most recent instance where you sent humiliating images of someone to others, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)

How confident were you when you sent humiliating images of someone to others that you would not be confronted?

How confident were you when you sent humiliating images of someone to others that you would not experience social consequences (e.g., lose friends, lose important social connections)?
How confident were you when you sent humiliating images of someone to others that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have sent links with rumors, gossip, etc. about another student to other people, which is similar to what other students at UNR have reported.

How many times have you done this within your time at UNR?
How much distress do you think this caused the targets of this behavior?
How much distress did you intend to cause to the targets of this behavior?
Generally, thinking about who you sent links with rumors, gossip, etc. to other people about, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who you sent links with rumors, gossip, etc. to other people about, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you sent links with rumors, gossip, etc. about someone to other people, would you consider that person a part of your social network? (y / n / I targeted someone randomly)
Thinking about the most recent instance where you sent links with rumors, gossip, etc. about someone to other people, were you confronted by the person it was about in the real world? (y/n)
Thinking about the most recent instance where you sent links with rumors, gossip, etc. about someone to other people, were you confronted by the person it was about online? (y/n)
Thinking about the most recent instance where you sent links with rumors, gossip, etc. about someone to other people, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)
How confident were you when you sent the links with rumors, gossip, etc. about someone to other people that you would not be confronted?
How confident were you when you sent links with rumors, gossip, etc. about someone to other people that you would not experience social consequences (e.g., lose friends, lose important social connections)?
How confident were you when you sent links with rumors, gossip, etc. about someone to other people that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have hacked someone’s email and sent messages meant to embarrass them to their contacts, which is similar to what other students at UNR have reported.

How many times have you done this within your time at UNR?
How much distress do you think this caused the targets of this behavior?
How much distress did you intend to cause to the targets of this behavior?
Generally, thinking about whose email you hacked and sent embarrassing messages from, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about whose email you hacked and sent embarrassing messages from, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you hacked someone’s email and sent embarrassing messages from their account, would you consider that person a part of your social network? (y / n / I targeted someone randomly)

Thinking about the most recent instance where you hacked someone’s email and sent embarrassing messages from their account, were you confronted by the person it was about in the real world? (y/n)

Thinking about the most recent instance where you hacked someone’s email and sent embarrassing messages from their account, were you confronted by the person it was about online? (y/n)

Thinking about the most recent instance where you hacked someone’s email and sent embarrassing messages from their account, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)

How confident were you when you hacked someone’s email and sent embarrassing emails from their account that you would not be confronted?

How confident were you when you hacked someone’s email and sent embarrassing messages from their account that you would not experience social consequences (e.g., lose friends, lose important social connections)?

How confident were you when you hacked someone’s email and sent embarrassing messages from their account that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have hacked someone’s social media account and posted or changed information in an attempt to embarrass them, which is similar to what other students at UNR have reported.

How many times have you done this within your time at UNR?

How much distress do you think this caused the targets of this behavior?

How much distress did you intend to cause to the targets of this behavior?

Generally, thinking about whose social media account you hacked and posted or changed information in an attempt to embarrass them, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about whose social media account you hacked and posted or changed information in an attempt to embarrass them, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you hacked someone’s social media account and posted or changed information in an attempt to embarrass them, would you consider that person a part of your social network? (y / n / I targeted someone randomly)

Thinking about the most recent instance where you hacked someone’s social media account and posted or changed information in an attempt to embarrass them, were you confronted by the person it was about in the real world? (y/n)
Thinking about the most recent instance where you hacked someone’s social media account and posted or changed information in an attempt to embarrass them, were you confronted by the person it was about online? (y/n)

Thinking about the most recent instance where you hacked someone’s social media account and posted or changed information in an attempt to embarrass them, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)

How confident were you when you hacked someone’s social media account and posted or changed information that you would not be confronted?

How confident were you when you hacked someone’s social media account and posted or changed information in an attempt to embarrass them that you would not experience social consequences (e.g., lose friends, lose important social connections)?

How confident were you when you hacked someone’s social media account and posted or changed information in an attempt to embarrass them that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have recorded a video or took pictures of someone while a group laughed and forced them to do something humiliating or ridiculous, which is similar to what other students at UNR have reported.

How many times have you done this within your time at UNR?

How much distress do you think this caused the targets of this behavior?

How much distress did you intend to cause to the targets of this behavior?

Generally, thinking about who was getting laughed at for doing something ridiculous while you were recording/taking pictures, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about who was getting laughed at for doing something ridiculous while you were recording/taking pictures, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you recorded a video or took pictures of someone while a group laughed and forced them to do something humiliating or ridiculous, would you consider that person a part of your social network? (y / n / I did not know the subject of the videos/images)

Thinking about the most recent instance where you recorded a video or took pictures of someone while a group laughed and forced them to do something humiliating or ridiculous, were you confronted by the person it was about in the real world? (y/n)

Thinking about the most recent instance where you recorded a video or took pictures of someone while a group laughed and forced them to do something humiliating or ridiculous, were you confronted by the person it was about online? (y/n)

Thinking about the most recent instance where you recorded a video or took pictures of someone while a group laughed and forced them to do something humiliating or ridiculous, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement)? (y/n)
How confident were you when you recorded or took pictures of someone doing something embarrassing that you would not be confronted by the person who was embarrassed?
How confident were you when you recorded a video or took pictures of someone while a group laughed and forced them to do something humiliating or ridiculous that you would not experience social consequences (e.g., lose friends, lose important social connections)?
How confident were you when you recorded a video or took pictures of someone while a group laughed and forced them to do something humiliating or ridiculous that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have sent images or recordings that you have taken of someone who was being laughed at and forced to do something humiliating or ridiculous to other people, which is similar to what other students at UNR have reported.
How many times have you done this within your time at UNR?
How much distress do you think this caused the targets of this behavior?
How much distress did you intend to cause to the targets of this behavior?
Generally, thinking about who was getting laughed at for doing something ridiculous in the pictures you sent, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who was getting laughed at for doing something ridiculous in the pictures you sent, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you sent images or recordings that you have taken of someone who was being laughed at and forced to do something humiliating or ridiculous, would you consider that person a part of your social network? (y / n / I did not know the subject of the videos/images)
Thinking about the most recent instance where you sent images or recordings that you have taken of someone who was being laughed at and forced to do something humiliating or ridiculous, were you confronted by the person it was about in the real world? (y/n)
Thinking about the most recent instance where you sent images or recordings that you have taken of someone who was being laughed at and forced to do something humiliating or ridiculous, were you confronted by the person it was about online? (y/n)
Thinking about the most recent instance where you sent images or recordings that you have taken of someone who was being laughed at and forced to do something humiliating or ridiculous, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement)? (y/n)
How confident were you when you sent the pictures of someone doing something embarrassing that you would not be confronted by the person who was embarrassed?
How confident were you when you sent images or recordings that you have taken of someone who was being laughed at and forced to do something humiliating or ridiculous, that you would not experience social consequences (e.g., lose friends, lose important social connections)?
How confident were you when you sent images or recordings that you have taken of someone who was being laughed at and forced to do something humiliating or ridiculous, that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have forwarded images or video that another person took of someone being laughed at and forced to do something humiliating or ridiculous to other people, which is similar to what other students at UNR have reported. How many times have you done this within your time at UNR? How much distress do you think this caused the targets of this behavior? How much distress did you intend to cause to the targets of this behavior? Generally, thinking about who was getting laughed at for doing something ridiculous in the pictures you forwarded, are you more popular, less popular, or about the same level of popularity as them? Generally, thinking about who was getting laughed at for doing something ridiculous in the pictures you forwarded, are you more intelligent, less intelligent, or about the same level of intelligence as them? Thinking about the most recent instance where you forwarded images or video that another person took of someone being laughed at and forced to do something humiliating or ridiculous to other people, would you consider that person a part of your social network? (y / n / I did not know the subject of the video/pictures) Thinking about the most recent instance where you forwarded images or video that another person took of someone being laughed at and forced to do something humiliating or ridiculous to other people, were you confronted by the person it was about in the real world? (y/n) Thinking about the most recent instance where you forwarded images or video that another person took of someone being laughed at and forced to do something humiliating or ridiculous to other people, were you confronted by the person it was about online? (y/n) Thinking about the most recent instance where you forwarded images or video that another person took of someone being laughed at and forced to do something humiliating or ridiculous to other people, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)

How confident were you when you forwarded the pictures of someone doing something embarrassing that you would not be confronted by the person who was embarrassed? How confident were you when you forwarded images or video that another person took of someone being laughed at and forced to do something humiliating or ridiculous to other people that you would not experience social consequences (e.g., lose friends, lose important social connections)? How confident were you when you forwarded images or video that another person took of someone being laughed at and forced to do something humiliating or ridiculous to other people that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?
You told us that you recorded a video or took pictures of someone while they were hit or hurt by another person, which is similar to what other students at UNR have reported. How many times have you done this within your time at UNR? How much distress do you think this caused the targets of this behavior? How much distress did you intend to cause to the targets of this behavior? Generally, thinking about who was getting hit or hurt in the video/pictures you took, are you more popular, less popular, or about the same level of popularity as them? Thinking about the most recent instance where you recorded a video or took pictures of someone while they were hit or hurt by another person, would you consider that person a part of your social network? (y / n / I did not know the subject of the videos/images) Thinking about the most recent instance where you recorded a video or took pictures of someone while they were hit or hurt by another person, were you confronted by the person it was about in the real world? (y/n) Thinking about the most recent instance where you recorded a video or took pictures of someone while they were hit or hurt by another person, were you confronted by the person it was about online? (y/n) Thinking about the most recent instance where you recorded a video or took pictures of someone while they were hit or hurt by another person, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement)? How confident were you when you were recorded video or took pictures of someone getting hurt that you would not be confronted by the person who was hurt? How confident were you when you recorded a video or took pictures of someone while they were hit or hurt by another person that you would not experience social consequences (e.g., lose friends, lose important social connections)? How confident were you when you recorded a video or took pictures of someone while they were hit or hurt by another person that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have sent images or video of someone being hurt by another person to other people, which is similar to what other students at UNR have reported. How many times have you done this within your time at UNR? How much distress do you think this caused the targets of this behavior? How much distress did you intend to cause to the targets of this behavior? Generally, thinking about who was getting hit or hurt in the video/pictures you sent, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who was getting hit or hurt in the video/pictures you sent, are you more intelligent, less intelligent, or about the same level of intelligence as them? Thinking about the most recent instance where you sent video or pictures of someone getting hurt, would you consider that person a part of your social network? (y / n / I did not know the subject of the videos/images) Thinking about the most recent instance where you sent video or pictures of someone getting hurt, were you confronted by the person it was about in the real world? (y/n) Thinking about the most recent instance where you sent video or pictures of someone getting hurt, were you confronted by the person it was about online? (y/n) Thinking about the most recent instance where you sent video or pictures of someone getting hurt, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement)? (y/n) How confident were you when you sent the video or pictures of someone getting hurt that you would not be confronted by the person who was hurt? How confident were you when you sent the video or pictures of someone getting hurt that you would not experience social consequences (e.g., lose friends, lose important social connections)? How confident were you when you sent the video or pictures of someone getting hurt that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have forwarded images or video that someone else sent you of someone being hurt by another person to others, which is similar to what other students at UNR have reported. How many times have you done this within your time at UNR? How much distress do you think this caused the targets of this behavior? How much distress did you intend to cause to the targets of this behavior? Generally, thinking about who was getting hit or hurt in the video/pictures you forwarded, are you more popular, less popular, or about the same level of popularity as them? Generally, thinking about who was getting hit or hurt in the video/pictures you forwarded, are you more intelligent, less intelligent, or about the same level of intelligence as them? Thinking about the most recent instance where you forwarded images or video that someone else sent you of someone being hurt by another person to others, would you consider that person a part of your social network? (y / n / I did not know the subject of the videos/images) Thinking about the most recent instance where you forwarded images or video that someone else sent you of someone being hurt by another person to others, were you confronted by the person it was about in the real world? (y/n) Thinking about the most recent instance where you forwarded images or video that someone else sent you of someone being hurt by another person to others, were you confronted by the person it was about online? (y/n)
Thinking about the most recent instance where you forwarded images or video that someone else sent you of someone being hurt by another person to others, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)
How confident were you when you forwarded the video or pictures of someone getting hurt that you would not be confronted by the person who was hurt?
How confident were you when you have forwarded images or video that someone else sent you of someone being hurt by another person to others that you would not experience social consequences (e.g., lose friends, lose important social connections)?
How confident were you when you have forwarded images or video that someone else sent you of someone being hurt by another person to others that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have posted another student’s secrets, compromising information, or images online, which are similar to what other students at UNR have reported.
How many times have you done this within your time at UNR?
How much distress do you think this caused the targets of this behavior?
How much distress did you intend to cause to the targets of this behavior?
Generally, thinking about whose secrets/compromising information/images you posted online, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about whose secrets/compromising information/images you posted online, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you posted another student’s secrets, compromising information, or images online, would you consider that person a part of your social network? (y / n / I targeted someone randomly)
Thinking about the most recent instance where you posted another student’s secrets, compromising information, or images online, were you confronted by the person it was about in the real world? (y/n)
Thinking about the most recent instance where you posted another student’s secrets, compromising information, or images online, were you confronted by the person it was about online? (y/n)
Thinking about the most recent instance where you posted another student’s secrets, compromising information, or images online, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)
How confident were you when you posted someone’s secrets/compromising information/images online that you would not be confronted by the person?
How confident were you when you posted another student’s secrets, compromising information, or images online that you would not experience social consequences (e.g., lose friends, lose important social connections)?
How confident were you when you posted another student’s secrets, compromising information, or images online that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have deliberately excluded someone from online groups, which is similar to what other students at UNR have reported.
How many times have you done this within your time at UNR?
How much distress do you think this caused the targets of this behavior?
How much distress did you intend to cause to the targets of this behavior?
Generally, thinking about who you deliberately excluded from an online group, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who you deliberately excluded from an online group, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you deliberately excluded someone from online groups, would you consider that person a part of your social network? (y / n / I targeted someone randomly)
Thinking about the most recent instance where you deliberately excluded someone from online groups, were you confronted by the person it was about in the real world? (y/n)
Thinking about the most recent instance where you deliberately excluded someone from online groups, were you confronted by the person it was about online? (y/n)
Thinking about the most recent instance where you deliberately excluded someone from online groups, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)
How confident were you when you deliberately excluded someone from an online group that you would not be confronted by the person?
How confident were you when you deliberately excluded someone from online groups that you would not experience social consequences (e.g., lose friends, lose important social connections)?
How confident were you when you deliberately excluded someone from online groups that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have sent repeated messages that were meant to be threatening or intimidating which is similar to what other students at UNR have reported.
How many times have you done this within your time at UNR?
How much distress do you think this caused the targets of this behavior?
How much distress did you intend to cause to the targets of this behavior?
Generally, thinking about who you sent repeated messages meant to be threatening or intimidating to, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who you sent repeated messages meant to be threatening or intimidating to, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you sent repeated messages that were meant to be threatening or intimidating, would you consider that person a part of your social network? (y / n / I targeted someone randomly)

Thinking about the most recent instance where you sent repeated messages that were meant to be threatening or intimidating, were you confronted by the person it was about in the real world? (y/n)

Thinking about the most recent instance where you sent repeated messages that were meant to be threatening or intimidating, were you confronted by the person it was about online? (y/n)

Thinking about the most recent instance where you sent repeated messages that were meant to be threatening or intimidating, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement)? (y/n)

How confident were you when you sent repeated messages that were meant to be threatening or intimidating to someone that you would not be confronted by the person?

How confident were you when you sent repeated messages that were meant to be threatening or intimidating that you would not experience social consequences (e.g., lose friends, lose important social connections)?

How confident were you when you sent repeated messages that were meant to be threatening or intimidating that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have recorded a video or took pictures of someone else while they performed a sexual behavior, which is similar to what other students at UNR have reported.

How many times have you done this within your time at UNR?

How much distress do you think this caused the targets of this behavior (i.e., the subject of the picture/video)?

How much distress did you intend to cause to the targets of this behavior?

Generally, thinking about who was performing a sexual act in the video/pictures you recorded, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about who was performing a sexual act in the video/pictures you recorded, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you recorded a video or took pictures of someone else while they performed a sexual behavior, would you consider that person a part of your social network? (y / n / I did not know the subject of the videos/images)

Thinking about the most recent instance where you recorded a video or took pictures of someone else while they performed a sexual behavior, were you confronted by the person it was about in the real world? (y/n)
Thinking about the most recent instance where you recorded a video or took pictures of someone else while they performed a sexual behavior, were you confronted by the person it was about online? (y/n)

Thinking about the most recent instance where you recorded a video or took pictures of someone else while they performed a sexual behavior, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)

How confident were you when you recorded the video or pictures of someone performing a sexual act that you would not be confronted by the person?

How confident were you when you recorded a video or took pictures of someone else while they performed a sexual behavior that you would not experience social consequences (e.g., lose friends, lose important social connections)?

How confident were you when you recorded a video or took pictures of someone else while they performed a sexual behavior that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have sent videos or images that you recorded of someone else performing a sexual act to other people, which is similar to what other students at UNR have reported.

How many times have you done this within your time at UNR?

How much distress do you think this caused the targets of this behavior (i.e., the subject of the picture/video)?

How much distress did you intend to cause to the targets of this behavior?

Generally, thinking about who was performing a sexual act in the video/pictures you sent, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about who was performing a sexual act in the video/pictures you sent, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you sent videos or images that you recorded of someone else performing a sexual act to other people, would you consider that person a part of your social network? (y / n / I did not know the subject of the videos/images)

Thinking about the most recent instance where you sent videos or images that you recorded of someone else performing a sexual act to other people, were you confronted by the person it was about in the real world? (y/n)

Thinking about the most recent instance where you sent videos or images that you recorded of someone else performing a sexual act to other people, were you confronted by the person it was about online? (y/n)

Thinking about the most recent instance where you sent videos or images that you recorded of someone else performing a sexual act to other people, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)

How confident were you when you sent the video or pictures of someone performing a sexual act that you would not be confronted by the person?
How confident were you when you sent videos or images that you recorded of someone else performing a sexual act to other people that you would not experience social consequences (e.g., lose friends, lose important social connections)?

How confident were you when you sent videos or images that you recorded of someone else performing a sexual act to other people that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?

You told us that you have forwarded videos or images of someone else performing a sexual act and sent to you to others, which is similar to what other students at UNR have reported.

How many times have you done this within your time at UNR?

How much distress do you think this caused the targets of this behavior (i.e., the subject of the picture/video)?

How much distress did you intend to cause to the targets of this behavior?

Generally, thinking about who was performing a sexual act in the video/pictures you forwarded, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about who was performing a sexual act in the video/pictures you forwarded, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you forwarded images of someone else performing a sexual act and sent to you to others, would you consider that person a part of your social network? (y / n / I did not know the subject of the videos/images)

Thinking about the most recent instance where you forwarded videos or images of someone else performing a sexual act and sent to you to others, were you confronted by the person it was about in the real world? (y/n)

Thinking about the most recent instance where you forwarded videos or images of someone else performing a sexual act and sent to you to others, were you confronted by the person it was about online? (y/n)

Thinking about the most recent instance where you forwarded videos or images of someone else performing a sexual act and sent to you to others, did you experience any consequences for your actions (e.g., losing friends, being contacted by school officials/law enforcement? (y/n)

How confident were you when you forwarded the video or pictures of someone performing a sexual act that you would not be confronted by the person?

How confident were you when you forwarded videos or images of someone else performing a sexual act and sent to you to others that you would not experience social consequences (e.g., lose friends, lose important social connections)?

How confident were you when you forwarded videos or images of someone else performing a sexual act and sent to you to others that you would not experience institutional consequences (e.g., get suspended/expelled from university or get contacted by law enforcement)?
Revised Cyberbully Victim Questionnaire (RCBQ-V)

Calvete et al., (2011); Gibb and Devereux (2014)

Victim Survey
Please use the following response options when answering these questions.
Within My Time At UNR (But not within the last year); Within the last 12 months (1 year); Within last 6 months; Within the last 3 months; Within the last month; Within the last week; Never.
Have you ever:
Had someone write embarrassing jokes, rumors, gossip, or comments about you online.
Had someone send threatening or insulting images to you via email.
Had someone send threatening or insulting images to you by text message.
Had someone post humiliating images of you online.
Had someone send links to these images to other people.
Had someone send links to rumors or gossip regarding you to others.
Had someone hack your email and send messages to others that embarrassed you.
Had someone hack your social media accounts and post/change information that embarrassed you.
Had someone record a video or take pictures of you doing something humiliating or ridiculous.
Had images of you doing something humiliating or ridiculous sent to someone that was not supposed to see them.
Had images of you doing something humiliating or ridiculous forwarded to someone that was not supposed to see them.
Had someone record a video or take a picture of you while someone else was hurting you.
Had someone send images of you getting hurt sent to someone that was not supposed to see them.
Had someone forward images of you getting hurt sent to someone that was not supposed to see them.
Had your secrets or compromising images/information posted online.
Felt deliberately excluded from online groups.
Had someone send repeated messages that were threatening or intimidating.
Had someone record a video or take a picture of you performing a sexual act.
Had images of you performing a sexual behavior sent to someone that was not supposed to see them.
Had images of you performing a sexual behavior forwarded to someone that was not supposed to see them.
**RCBVQ Follow-up Questionnaire**

Gibb and Devereux (2014)

*(Skip pattern – question only for those who indicated being the victim of the behavior above)*

Using the following scale, please estimate:

1 (No Distress) 4 (Moderate Distress) 7 (Severe Distress)

Your general level of distress due to the behaviors you have experienced

How much general distress do you think was intended by the perpetrator?

You told us that you had someone write embarrassing jokes, rumors, gossip, or comments about you online, which is similar to what other students at UNR reported.

During your time at UNR, how many times have you experienced this?

How much distress did this cause you?

How much distress do you think was intended?

How confident are you that you know who sent threatening or insulting images to you via email?

Generally, thinking about who had written the embarrassing jokes, rumors, gossip or comments about you, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about who had written the embarrassing jokes, rumors, gossip or comments about you, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you had embarrassing jokes, rumors, gossip or comments posted about you online, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)

Thinking about the most recent instance where you had embarrassing jokes, rumors, gossip or comments posted about you online, did you confront the person who targeted you face-to-face? (y/n)

Thinking about the most recent instance where you had embarrassing jokes, rumors, gossip or comments posted about you online, did you confront the person via the Internet/phone? (y/n)

Thinking about the most recent time you had embarrassing jokes, rumors, gossip or comments posted about you online, did you confront the person?

Thinking about the most recent time you had embarrassing jokes, rumors, gossip or comments posted about you online, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?

*(Skip pattern – only displayed if yes selected)*

If yes, did you: (y/n)

Contact friends?

Contact important social contacts?

Contact school officials (professors, counselors, other administrative staff)?
Contact law enforcement personnel (including university employed law enforcement personnel)?
Do you think that by confronting the person you could have had the jokes, rumors, gossip or comments removed from the web?

You told us that you had someone send threatening or insulting images to you via email, which is similar to what other students at UNR reported.
During your time at UNR, how many times have you experienced this?
How much distress did this cause you?
How much distress do you think was intended?
How confident are you that you know who sent threatening or insulting images sent to you via email?
Generally, thinking about who sent threatening or insulting images to you via email, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who sent threatening or insulting images to you via email, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you had someone send threatening or insulting images to you via email, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)
Thinking about the most recent instance where you had someone send threatening or insulting images to you via email, did you confront the person who targeted face-to-face? (y/n)
Thinking about the most recent instance where you had someone send threatening or insulting images to you via email, did you confront the person via the Internet/phone? (y/n)
Thinking about the most recent time you had someone send threatening or insulting images to you via email, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?
Do you think that by confronting the person you could stop the threatening or insulting images via email?

You told us that you had someone send threatening or insulting images to you by text message, which is similar to what other students at UNR reported.
During your time at UNR, how many times have you experienced this?
How much distress did this cause you?
How much distress do you think was intended?
How confident are you that you know who sent threatening or insulting images sent to you via text?
Generally, thinking about who sent threatening or insulting images to you via text, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who sent threatening or insulting images to you via text, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you had someone send threatening or insulting images to you by text message, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)

Thinking about the most recent instance where you had someone send threatening or insulting images to you by text message, did you confront the person face-to-face? (y/n)

Thinking about the most recent instance where you had someone send threatening or insulting images to you by text message, did you confront the person via the Internet/phone? (y/n)

Thinking about the most recent time you had someone send threatening or insulting images to you by text message, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?

Do you think that by confronting the person you could stop the threatening or insulting images via text?

You told us that you had someone post humiliating images of you online, which is similar to what other students at UNR reported.

During your time at UNR, how many times have you experienced this?

How much distress did this cause you?

How much distress do you think was intended?

How confident are you that you know who posted humiliating images of you online?

Generally, thinking about who posted humiliating images of you online, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about who posted humiliating images of you online, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you had someone post humiliating images of you online, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)

Thinking about the most recent instance where you had someone post humiliating images of you online, did you confront the person face-to-face? (y/n)

Thinking about the most recent instance where you had someone post humiliating images of you online, did you confront the person via the Internet/phone? (y/n)

Thinking about the most recent time you had someone post humiliating images of you online, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?

Do you think that by confronting the person you could remove the humiliating images from the web?

You told us that you had someone send links to humiliating images of you to other people, which is what other students at UNR reported.

During your time at UNR, how many times have you experienced this?

How much distress did this cause you?

How much distress do you think was intended?
How confident are you that you know who sent links to humiliating images of you to other people?
Generally, thinking about who sent links to humiliating images of you to other people, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who sent links to humiliating images of you to other people, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you had someone send links to humiliating images of you to other people, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)
Thinking about the most recent instance where you had someone send links to humiliating images of you to other people, did you confront the person face-to-face? (y/n)
Thinking about the most recent instance where you had someone send links to humiliating images of you to other people, did you confront the person via the Internet/phone? (y/n)
Thinking about the most recent instance where you had someone send links to humiliating images of you to other people, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?
Do you think that by confronting the person you could stop them from sending links to humiliating images of you to other people?

You told us that you had someone send links to rumors or gossip regarding you to others, which is similar to what other students at UNR reported.
During your time at UNR, how many times have you experienced this?
How much distress did this cause you?
How much distress do you think was intended?
How confident are you that you know who sent links to rumors or gossip about you to other people?
Generally, thinking about who sent links to rumors or gossip about you to other people, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who sent links to rumors or gossip about you to other people, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you had someone send links to rumors or gossip regarding you to others, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)
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Thinking about the most recent instance where you had someone send links to rumors or gossip regarding you to others, did you confront the person via the Internet/phone? (y/n)
Thinking about the most recent time you had someone send links to rumors or gossip regarding you to others, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?
Do you think that by confronting the person you could stop them from sending links to rumors or gossip about you to other people?
You told us that you had someone hack your email and send messages to others that embarrassed you, which is similar to what other students at UNR reported. During your time at UNR, how many times have you experienced this? How much distress did this cause you? How much distress do you think was intended? How confident are you that you know who hacked your email and sent messages to your contacts that embarrassed you? Generally, thinking about who hacked your email and sent messages to your contacts that embarrassed you are you more popular, less popular, or about the same level of popularity as them? Generally, thinking about who hacked your email and sent messages to your contacts that embarrassed you are you more intelligent, less intelligent, or about the same level of intelligence as them?

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You told us that you had someone hack your social media account and post/change information that embarrassed you, which is similar to what other students at UNR reported. During your time at UNR, how many times have you experienced this? How much distress did this cause you? How much distress do you think was intended? How confident are you that you know who hacked your social media account and posted/changed information that embarrassed you? Generally, thinking about who hacked your social media account and posted/changed information that embarrassed you are you more popular, less popular, or about the same level of popularity as them? Generally, thinking about who hacked your social media account and posted/changed information that embarrassed you are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent time you had your social media account and posted/changed information did you confront the person?
Do you think that by confronting the person you could stop them from hacking your social media account and posting/changing information?

You told us that you had someone record a video or take pictures of you doing something humiliating or ridiculous, which is similar to what other students at UNR reported. During your time at UNR, how many times have you experienced this? How much distress did this cause you? How much distress do you think was intended? How confident are you that you know who recorded a video/took pictures of you doing something humiliating or ridiculous? Generally, thinking about who recorded a video/took pictures of you doing something humiliating or ridiculous, are you more popular, less popular, or about the same level of popularity as them? Generally, thinking about who recorded a video/took pictures of you doing something humiliating or ridiculous, are you more intelligent, less intelligent, or about the same level of intelligence as them? Thinking about the most recent instance where you had someone record a video or take pictures of you doing something humiliating or ridiculous, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly) Thinking about the most recent instance where you had someone record a video or take pictures of you doing something humiliating or ridiculous, did you confront the person face-to-face? (y/n) Thinking about the most recent instance where you had someone record a video or take pictures of you doing something humiliating or ridiculous, did you confront the person via the Internet/phone? (y/n) Thinking about the most recent time you had someone record a video or take pictures of you doing something humiliating or ridiculous, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)? Do you think that by confronting the person you could stop them from recording video/taking pictures of you while you did something embarrassing or ridiculous?

You told us that you had images of you doing something humiliating or ridiculous sent to someone that was not supposed to see them, which is similar to what other students at UNR reported. During your time at UNR, how many times have you experienced this? How much distress did this cause you? How much distress do you think was intended? How confident are you that you know who sent video/pictures of you doing something humiliating or ridiculous? Generally, thinking about who sent the video/pictures of you doing something humiliating or ridiculous, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who sent the video/pictures of you doing something humiliating or ridiculous, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you had images of you doing something humiliating or ridiculous sent to someone that was not supposed to see them, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)

Thinking about the most recent instance where you had images of you doing something humiliating or ridiculous sent to someone that was not supposed to see them, did you confront the person face-to-face? (y/n)

Thinking about the most recent instance where you had images of you doing something humiliating or ridiculous sent to someone that was not supposed to see them, did you confront the person via the Internet/phone? (y/n)

Thinking about the most recent time you had images of you doing something humiliating or ridiculous sent to someone that was not supposed to see them, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?

Do you think that by confronting the person you could stop them from sending video/pictures of you while you did something embarrassing or ridiculous?

You told us that you had images of you doing something humiliating or ridiculous forwarded to someone that was supposed to see them, which is similar to what other students at UNR reported.

During your time at UNR, how many times have you experienced this?

How much distress did this cause you?

How much distress do you think was intended?

How confident are you that you know who forwarded video/pictures of you doing something humiliating or ridiculous?

Generally, thinking about who forwarded the video/pictures of you doing something humiliating or ridiculous, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about who forwarded video/pictures of you doing something humiliating or ridiculous, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent time you had someone forward video/pictures of you while you did something embarrassing or ridiculous did you confront the person?

Do you think that by confronting the person you could stop them from forwarding video/pictures of you while you did something embarrassing or ridiculous?

You told us that you had someone record a video or take a picture of you while someone hurt you, which is similar to what other students at UNR reported.

During your time at UNR, how many times have you experienced this?

How much distress did this cause you?

How much distress do you think was intended?
How confident are you that you know who recorded video/took pictures of you getting hurt?

Generally, thinking about who recorded video/took pictures of you getting hurt, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about who recorded video/took pictures of you getting hurt, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you had someone record a video or take a picture of you while someone hurt you, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)

Thinking about the most recent instance where you had someone record a video or take a picture of you while someone hurt you, did you confront the person face-to-face? (y/n)

Thinking about the most recent instance where you had someone record a video or take a picture of you while someone hurt you, did you confront the person via the Internet/phone? (y/n)

Thinking about the most recent instance where you had someone record a video or take a picture of you while someone hurt you, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?

Do you think that by confronting the person you could stop them from recording video/taking pictures of you while you were hurt?

You told us that you had images of you getting hurt sent to someone that was not supposed to see them, which is similar to what other students at UNR reported.

During your time at UNR, how many times have you experienced this?

How much distress did this cause you?

How much distress do you think was intended?

How confident are you that you know who sent the video/pictures of you getting hurt?

Generally, thinking about who sent video/pictures of you getting hurt, are you more popular, less popular, or about the same level of popularity as them?

Generally, thinking about who sent the video/pictures of you getting hurt, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you had images of you getting hurt sent to someone that was not supposed to see them, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)

Thinking about the most recent instance where you had images of you getting hurt sent to someone that was not supposed to see them, did you confront the person face-to-face? (y/n)

Thinking about the most recent instance where you had images of you getting hurt sent to someone that was not supposed to see them, did you confront the person via the Internet/phone? (y/n)

Thinking about the most recent time you had images of you getting hurt sent to someone that was not supposed to see them, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?

Do you think that by confronting the person you could stop them from sending video/pictures of you while you were hurt?
You told us that you had images of you getting hurt forwarded to someone that was not supposed to see them, which is similar to what other students at UNR reported. During your time at UNR, how many times have you experienced this? How much distress did this cause you? How much distress do you think was intended? How confident are you that you know who forwarded the video/pictures of you getting hurt?

Generally, thinking about who forwarded video/took pictures of you getting hurt, are you more popular, less popular, or about the same level of popularity as them? Generally, thinking about who forwarded the video/pictures of you getting hurt, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you had images of you getting hurt forwarded to someone that was not supposed to see them, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)

Thinking about the most recent instance where you had images of you getting hurt forwarded to someone that was not supposed to see them, did you confront the person face-to-face? (y/n)

Thinking about the most recent instance where you had images of you getting hurt forwarded to someone that was not supposed to see them, did you confront the person via the Internet/phone? (y/n)

Thinking about the most recent time you had images of you getting hurt forwarded to someone that was not supposed to see them, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)? Do you think that by confronting the person you could stop them from forwarding video/pictures of you while you were hurt?

You told us that you had your secrets or compromising images/information posted online, which is similar to what other students at UNR have reported. During your time at UNR, how many times have you experienced this? How much distress did this cause you? How much distress do you think was intended? How confident are you that you know who posted your secrets or compromising information?

Generally, thinking about who posted your secrets or compromising information, are you more popular, less popular, or about the same level of popularity as them? Generally, thinking about who posted your secrets or compromising images/information, are you more intelligent, less intelligent, or about the same level of intelligence as them?

Thinking about the most recent instance where you had your secrets or compromising images/information posted online, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)

Thinking about the most recent instance where you had your secrets or compromising images/information posted online, did you confront the person face-to-face? (y/n)
Thinking about the most recent instance where you had your secrets or compromising images/information posted online, did you confront the person via the Internet/phone? (y/n)
Thinking about the most recent time you had your secrets or compromising images/information posted online, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?
Do you think that by confronting the person you could stop them from posting your secrets or compromising images/information online?

You told us that you felt deliberately excluded from online groups, which is similar to what other students at UNR have reported.
During your time at UNR, how many times have you experienced this?
How much distress did this cause you?
How much distress do you think was intended?
How confident are you that you know who deliberately excluded you from an online group?
Generally, thinking about who deliberately excluded you from an online group, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who deliberately excluded you from an online group, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you felt deliberately excluded from online groups, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)
Thinking about the most recent instance where you felt deliberately excluded from online groups, did you confront the person face-to-face? (y/n)
Thinking about the most recent instance where you felt deliberately excluded from online groups, did you confront the person via the Internet/phone? (y/n)
Thinking about the most recent time you felt deliberately excluded from online groups, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?
Do you think that by confronting the person you could stop them from excluding you from online groups?

You told us that you had someone send repeated messages that were threatening or intimidating, which is similar to what other students at UNR have reported.
During your time at UNR, how many times have you experienced this?
How much distress did this cause you?
How much distress do you think was intended?
How confident are you that you know who sent you repeated messages meant to be threatening or intimidating?
Generally, thinking about who sent you repeated messages meant to be threatening or intimidating, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who sent you repeated messages meant to be threatening or intimidating, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you had someone send repeated messages that were threatening or intimidating, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)
Thinking about the most recent instance where you had someone send repeated messages that were threatening or intimidating, did you confront the person face-to-face? (y/n)
Thinking about the most recent instance where you had someone send repeated messages that were threatening or intimidating, did you confront the person via the Internet/phone? (y/n)
Thinking about the most recent time you had someone send repeated messages that were threatening or intimidating, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?
Do you think that by confronting the person you could stop them from sending repeated messages meant to be threatening or intimidating?

You told us that you had someone record a video or take pictures of you performing a sexual act, which is similar to what other students at UNR have reported.
During your time at UNR, how many times have you experienced this?
How much distress did this cause you?
How much distress do you think was intended?
How confident are you that you know who recorded video/took pictures of you performing a sexual act?
Generally, thinking about who recorded video/took pictures of you performing a sexual act, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who recorded video/took pictures of you performing a sexual act, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you had someone record a video or take pictures of you performing a sexual act, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)
Thinking about the most recent instance where you had someone record a video or take pictures of you performing a sexual act, did you confront the person face-to-face? (y/n)
Thinking about the most recent instance where you had someone record a video or take pictures of you performing a sexual act, did you confront the person via the Internet/phone? (y/n)
Thinking about the most recent time you had someone record a video or take pictures of you performing a sexual act, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?
Do you think that by confronting the person you could stop them from recording video/taking pictures of you while you performed a sexual act?
You told us that you had someone send images of you performing a sexual behavior to someone that was not supposed to see them, which is similar to what other students at UNR have reported.
During your time at UNR, how many times have you experienced this?
How much distress did this cause you?
How much distress do you think was intended?
How confident are you that you know who sent the video/pictures of you performing a sexual act?
Generally, thinking about who sent video/pictures of you performing a sexual act, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who sent video/pictures of you performing a sexual act, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you had someone send images of you performing a sexual behavior to someone that was not supposed to see them, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)
Thinking about the most recent instance where you had someone send images of you performing a sexual behavior to someone that was not supposed to see them, did you confront the person face-to-face? (y/n)
Thinking about the most recent instance where you had someone send images of you performing a sexual behavior to someone that was not supposed to see them, did you confront the person via the Internet/phone? (y/n)
Thinking about the most recent time you had someone send images of you performing a sexual behavior to someone that was not supposed to see them, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?
Do you think that by confronting the person you could stop them from sending video/pictures of you while you performed a sexual act?

You told us that you had someone forward images of you performing a sexual behavior to someone that was not supposed to see them, which is similar to what other students at UNR have reported.
During your time at UNR, how many times have you experienced this?
How much distress did this cause you?
How much distress do you think was intended?
How confident are you that you know who forwarded the video/pictures of you performing a sexual act?
Generally, thinking about who forwarded video/pictures of you performing a sexual act, are you more popular, less popular, or about the same level of popularity as them?
Generally, thinking about who forwarded video/pictures of you performing a sexual act, are you more intelligent, less intelligent, or about the same level of intelligence as them?
Thinking about the most recent instance where you had someone forward images of you performing a sexual behavior to someone that was not supposed to see them, would you consider that person a part of your social network? (y / n / I feel I was targeted randomly)
Thinking about the most recent instance where you had someone forward images of you performing a sexual behavior to someone that was not supposed to see them, did you confront the person face-to-face? (y/n)
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Thinking about the most recent time you had someone forward images of you performing a sexual behavior to someone that was not supposed to see them, did you report this to anyone (e.g., friends, university officials, law enforcement personnel)?
Do you think that by confronting the person you could stop them from forwarding video/pictures of you while you performed a sexual act?
Attitudes Toward Cyberbullying

Barlett and Gentile (2012)

Please rate each of the following items on how much you agree or disagree with each statement using the scale provided.

1 2 3 4 5
Disagree Strongly Agree Strongly

It is acceptable to send mean emails to others when they deserve it.

People who join groups on Facebook or MySpace that make fun of others are justified in doing so.

It makes me feel good to send texts that make fun of others.

Sometimes using passive aggressive methods of sending mean emails to others is the only way to get even.

I do not find it appropriate to send mean text messages or emails to others.

I feel bad sending mean text messages or emails to others.

I have sent mean text messages to others after they have text messaged me hurtful comments.

Teasing others on Facebook, emails, or text messages is fun.

Those that create Facebook or MySpace groups that are socially exclusive are fun to join.
Behavioral Reinforcement Questionnaire

Barlett & Gentile (2012)

Please use the following scale to complete the questions below.

1 (Not at all)  2  3  4  5  6  7 (Extremely)

I find it rewarding to be mean to others online if they deserve it.

Being mean to others online who deserve it makes me feel good.

I am usually satisfied with myself for successfully being mean to others online when they deserve it.

I feel bad when I am mean towards others online, even if I think they deserve it.

I get rewarded from my friends for being mean online to others who deserve it.

My family members have praised me for being mean online to others who have deserved it.

Being mean online is easy for me to do because I feel good afterward.

My friends and I both get satisfaction from being mean to others online.

I get amusement from sending mean text messages or emails to others.

My friends and I will often joke about some of the mean text messages that we sent to others.

My friends and I will often smile and laugh about the content of emails, text messages, or instant messages we sent.

None of my friends find it amusing that I send mean texts, emails, or messages to others online.
The Aggression Questionnaire

*Buss and Perry (1992)*

Please rate the degree to which you agree with the following statements about you.

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Once in a while I can’t control the urge to strike another person.

Given enough provocation, I may hit another person.

If somebody hits me, I hit them back.

I get into fights a little more than the average person.

If I have to resort to violence to protect my rights, I will.

There are people who pushed me so far that we came to blows.

I can think of no good reason for ever hitting a person.

I have threatened people I know.

I have become so mad that I have broken things.

I tell my friends openly when I disagree with them.

I often find myself disagreeing with people.

When people annoy me, I may tell them what I think of them.

I can’t help getting into arguments when people disagree with me.

My friends say that I’m somewhat argumentative.

I flare up quickly but get over it quickly.

When frustrated, I let my irritation show.

I sometimes feel like a powder keg ready to explode.

I am an even tempered person.
Some of my friends think I’m a hothead.

Sometimes I fly off the handle for no good reason.

I have trouble controlling my temper.

I am sometimes eaten up with jealously.

At times I feel I have gotten a raw deal out of life.

Other people always seem to get the breaks.

I wonder why sometimes I feel so bitter about things.

I know that “friends” talk about me behind my back.

I am suspicious of overly friendly strangers.

I sometimes feel that people are laughing at me behind my back.

When people are especially nice, I wonder what they want.
The Short Dark Triad – Machiavellianism Sub-Scale

Jones and Paulhus (2014)

Please rate the degree to which you agree with the following statements about you.

1 2 3 4 5
Disagree Disagree Neutral Agree Agree Strongly

Strongly

It’s not wise to tell your secrets.
I like to use clever manipulation to get my way.
Whatever it takes, you must get the important people on your side.
Avoid direct conflict with others because they may be useful in the future.
It’s wise to keep track of information that you can use against people later.
You should wait for the right time to get back at people.
There are things you should hide from other people to preserve your reputation.
Make sure your plans benefit yourself, not others.
Most people can be manipulated.
The Short Dark Triad – Psychopathy Sub-Scale

Jones and Paulhus (2014)

Please rate the degree to which you agree with the following statements about you.

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

I like to get revenge on authorities.

I avoid dangerous situations

Payback needs to be quick and nasty.

People often say I can be mean to others.

It’s true that I can be mean to others.

People who mess with me always regret it.

I have never gotten into trouble with the law.

I enjoy having sex with people I hardly know.

I’ll say anything to get what I want.
**Short Sadistic Impulse Scale**

O’Meara et al. (2011)

Please answer the following questions by indicating whether or not each statement is

0 1
Not Like Me Like Me

I enjoy seeing people hurt.

I would enjoy hurting someone physically, sexually, or emotionally.

Hurting people would be exciting.

I have hurt people for my own enjoyment.

People would enjoy hurting others if they gave it a go.

I have fantasies which involve hurting people.

I have hurt people because I could.

I wouldn’t intentionally hurt anyone.

I have humiliated others to keep them in line.

Sometimes I get so angry I want to hurt people.
Comprehensive assessment of sadistic tendencies (CAST)

Buckels, Jones, and Paulhus (2013b)

All responses are collected on 5-point scales with anchors:

1. Disagree
2. Strongly Disagree
3. 4. Agree
4. 5. Strongly Agree

Direct - Verbal

I was purposely mean to some people in high school.

I enjoy making jokes at the expense of others.

I have purposely tricked someone and laughed when they looked foolish.

When making fun of someone, it is especially amusing if they realize what I'm doing.

Perhaps I shouldn’t have, but I never got tired of mocking certain classmates.

I would never purposely humiliate someone. (R)

Direct - Physical

I enjoy physically hurting people.

I enjoy tormenting people.

I have the right to push certain people around.

I have dominated others using fear.

I enjoy hurting my partner during sex (or pretending to).

Vicarious

In video games, I like the realistic blood spurts.

I love to watch YouTube clips of people fighting.

I enjoy watching cage fighting (or MMA), where there is no escape.
I sometimes replay my favorite scenes from gory slasher films.

There’s way too much violence in sports.  (R)

I enjoy playing the villain in games and torturing other characters.

In professional car-racing, it’s the accidents that I enjoy most.
### Honor Concerns Scale

Ijzerman et al. (2007)

All responses are recorded on a 9 point scale with anchors

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My honor depends on the appreciation and respect that others have for me.

I could not have respect for myself if I did not have any honor.

I think that a public humiliation would be one of the situations that would violate my honor the most.

To maintain my honor, I have to be loyal to my family, regardless of the circumstances.

I think that honor is one of the most important things that I have as a human being.

I think that the honor of men would be violated if he were humiliated publicly by others.

It is my duty to be constantly prepared to defend the honor of my family.

A family member would violate my honor if he/she were to do something disgraceful.

My honor is the basis for my self-respect.
Honor Ideology of Women

Barnes et al. (2014)

All responses are recorded on a 9 point scale with anchors:

1  2  3  4  5  6  7  8  9
Strongly Disagree Neutral Strongly Agree

A responsible woman knows that what she does reflects on her family’s name.

A good woman is loyal to her family members, even when they have behaved badly.

A good woman stands by her man at all times.

A respectable woman avoids any behavior that might bring shame on her family.

A good woman never flirts with a man who is not her husband or boyfriend.

A good woman teaches her children the importance of family traditions.

A good woman never tolerates disrespect.

A good woman is always truthful, even when it hurts her.

A respectable woman never wants to be known as being sexually permissive.

A respectable woman never betrays her husband.

A good woman always puts her family first.

A good woman is willing to die for her family.
Honor Ideology of Manhood

Barnes et al. (2012)

All responses are recorded on a 9 point scale with anchors:

1  2  3  4  5  6  7  8  9
Strongly Disagree  Neutral  Strongly Agree

A man has the right to act with physical aggression toward another man who calls him an insulting name.

A real man doesn’t let other people push him around.

A man has the right to act with physical aggression toward another man who slanders his family.

A real man can always take care of himself.

A man has the right to act with physical aggression toward another man who openly flirts with his wife.

A real man never lets himself be a “door mat” to other people.

A man has the right to act with physical aggression toward another man who mistreats his children.

A real man can “pull himself up by his bootstraps” when the going gets tough.

A man has the right to act with physical aggression toward another man who steals from him.

A real man will never back down from a fight.

A man has the right to act with physical aggression toward another man who steals from him.
A real man never leaves a score unsettled.

A man has the right to act with physical aggression toward another man who vandalizes his home.

A real man doesn’t take any crap from anybody.

A man has the right to act with physical aggression toward another man who insults his mother.

A real man is seen as tough in the eyes of his peers.
Culture of Honor Questionnaire

Henry (2009)

All responses are recorded on a 6 point scale with anchors:

1  2  3  4  5  6
Strongly Disagree  Strongly Agree

If someone insults me, it may happen that I beat him/her up

My honor is worth defending, even aggressively

If someone insults or disrespects me, they will pay.
Study 2

Cyberball Followup Questionnaire

For each question, please click the number that best represents the feelings you were experiencing during the game.

1       2       3       4       5
Not at All        Extremely

I felt disconnected.

I felt rejected.

I felt like an outsider.

I felt I belonged to the group.

I felt the other players interacted with me a lot.

I felt good about myself.

My self-esteem was high.

I felt liked.

I felt insecure.

I felt satisfied.

I felt invisible.

I felt meaningless.

I felt non-existent.

I felt important.

I felt useful.

I felt powerful.

I felt I had control over the course of the game
I felt I had the ability to significantly alter events

I felt I was unable to influence the actions of others

I felt the other players decided everything

Good

Bad

Friendly

Unfriendly

Angry

Pleasant

Happy

Sad

I was ignored

I was excluded

Assuming the ball should be thrown to each person equally (33 of throws to each for three players, 25% for four players) what percentage of throws did you receive (type a number)
APPENDIX C: Examination of Normality for Recency/Range Linear Regression

Figure 1. Histogram of Summation of Recency/Range Scores Across All Behaviors.

Mean = 10.54
Std. Dev. = 14.656
N = 197
Figure 2. Normal Q-Q Plot of Summation of Recency/Range Scores Across All Behaviors.
Figure 3. Stem and Leaf plot – Summation of Recency/Range Scores Across All Behaviors.

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<tr>
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<td>Extremes (&gt;=28)</td>
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Stem width: 10.00
Each leaf: 1 case(s)
Figure 4. Histogram of Summation of Recency/Range Scores Across all Behaviors - Outliers Removed.
Figure 5. Normal Q-Q Plot of Summation of Recency/Range Scores Across All Behaviors
Figure 6. Stem and Leaf Plot of Summation of Recency/Range Scores Across All Behaviors – Outliers Removed.

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Stem width: 10.00
Each leaf: 1 case(s)
Appendix D: Examination of Assumptions of Normality for Number of Throws Returned to Player 1 After Receiving the Ball from Player 1

\textit{Figure 1.} Number of Throws Returned to Player 1 after Receiving the Ball from Player 1 Divided by Total Number of Catches from Player 1

\begin{figure}
\centering
\includegraphics[width=\textwidth]{throw_ratio_graph.png}
\caption{Histogram showing the distribution of throw ratios.}
\end{figure}

\text{Mean} = .25
\text{Std. Dev.} = .225
\text{N} = 238
Figure 2. Q–Q Plot - Number of Throw Returned to Player 1 After Receiving the Ball from Player 1 Divided by the Total Number of Catches from Player 1
**Figure 3.** Stem and Leaf plot – Number of Throws Returned to Player 1 After Receiving the Ball from Player 1 Divided by the Total Number of Throws from Player 1

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Stem width: .10
Each leaf: 1 case(s)
Figure 4. Number of Throws Returned to Player 1 after Receiving the Ball from Player 1 Divided by Total Number of Catches from Player 1 – Outliers Removed

Mean = .22
Std. Dev. = .19
N = 230
Figure 5. Q–Q Plot - Number of Throw Returned to Player 1 After Receiving the Ball from Player 1 Divided by the Total Number of Catches from Player 1 – Outliers Removed
Figure 6. Stem and Leaf plot – Number of Throws Returned to Player 1 After Receiving the Ball from Player 1 Divided by the Total Number of Throws from Player 1 – Outliers Removed

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Each leaf: 1 case(s)
Appendix E: Examination of Normality for Honor Concern Scale

Figure 1. Histogram of Honor Concern Scale (Ijzerman et al., 2007)

Mean = 5.90
Std. Dev. = 1.495
N = 235
Figure 2. Normal Q-Q Plot for Honor Concerns Scale (Ijzerman et al., 2007)
Figure 3. Stem and Leaf Plot for Honor Concerns Scale (Ijzerman et al., 2007)

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Stem width: 1.00
Each leaf: 1 case(s)
Figure 4. Histogram of Mean Honor Concern Scale (Ijzerman et al., 2007) with Outliers Removed

Mean = 5.95
Std. Dev. = 1.425
N = 232
Figure 5. Q-Q Plot of the Honor Concerns Scale with Outliers Removed
Figure 6. Stem and Leaf Plot for Honor Concerns Scale with Outliers Removed

Frequency  | Stem & Leaf
---|---
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3.00       | 2 . 678
3.00       | 3 . 023
2.00       | 3 . 68
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18.00      | 4 . 55566667777777888888
54.00      | 5 . 00000000000000001111111112222222222333333334444444
28.00      | 5 . 55555555566677777778888888888888
31.00      | 6 . 00000011222222233333333333444444
16.00      | 6 . 555566777788888888
20.00      | 7 . 00111112222233333344444
13.00      | 7 . 55566677778888
15.00      | 8 . 000000111122334
4.00       | 8 . 5566
6.00       | 9 . 00000

Stem width: 1.00
Each leaf: 1 case(s)