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Assessing the Effects of Psychopathy, Sadism, Aggression, and Boredom Proneness on Cyber Aggression Perpetration in Emerging Adults: Is Moral Disengagement to Blame?

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ASSESSING THE EFFECTS OF PSYCHOPATHY, SADISM, AGGRESSION, AND
BOREDOM PRONENESS ON CYBER AGGRESSION PERPETRATION IN
EMERGING ADULTS: IS MORAL DISENGAGEMENT TO BLAME?

by

Taylor Rose Nocera

A Dissertation
Submitted to the Graduate School,
the College of Education and Human Sciences
and the School of Psychology
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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ABSTRACT

Prior research indicates that a number of dark personality traits (e.g., psychopathy and sadism) positively predict the perpetration of cyber aggression among emerging adults (e.g., Goodboy & Martin, 2015; Craker & March, 2016; Nocera & Dahlen, 2018); however, few studies have utilized psychometrically sound measures of cyber aggression developed for use with this population. Additionally, some traits that are theoretically relevant to cyber aggression (Koban, Stein, Eckhardt, & Ohler, 2018; Slonje & Smith, 2008; Varjas, Talley, Meyers, Parris, & Cutts, 2010) and have been useful predictors of other forms of aggression have received insufficient attention in the cyber aggression literature (e.g., trait aggressiveness, boredom proneness). In addition, the possible role of moral disengagement (i.e., a way for people who behave in conflict with their moral values to avoid guilt or shame; Renati, Berrone, & Zanetti, 2012) as a potential mediator of the relationships of various personality traits to cyber aggression perpetration has not received sufficient attention. In the present study, we recruited 404 emerging adult (age 18-29) volunteers living in the United States through Amazon's MTurk. Workers completed an online survey assessing their use of electronic communication, psychopathic and sadistic personality traits, trait aggressiveness, boredom proneness, moral disengagement, and cyber aggression perpetration. Structural equation modeling tested whether psychopathic traits, sadistic traits, trait aggressiveness, and boredom proneness predicted cyber aggression perpetration and moral disengagement partially mediated these relationships. Sadism, anger, and moral disengagement predicted cyber aggression, and moral disengagement partially mediated the relationships between sadism and cyber aggression perpetration.

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CHAPTER I - INTRODUCTION

Internet-based and other electronic forms of communication (e.g., email and text messaging) have become essential in modern society (Rivers & Noret, 2010). As of 2019, nine in ten U.S. adults reported using the Internet, 96% of U.S. adults owned a cellphone, and 70% of U.S. adults used at least one form of social media (Pew Research Center, 2019). Despite the many benefits of electronic communication, it can be a medium for aggressing against others (Kellerman, Margolin, Borofsky, Baucom, & Iturralde, 2013). A small but rapidly growing literature has highlighted the role of *cyber aggression* (i.e., aggressive behavior enacted through the use of technologies such as social media and text messaging) as a means of harming others (Bauman & Baldasare, 2015; Barlett & Coyne, 2014; Goodboy & Martin, 2015; Kellerman et al., 2013) and has demonstrated that as many as 42% of adults between the ages of 19 and 73 reported engaging in cyber aggression (Zezulka & Seigfried-Spellar, 2016). This is cause for concern because cyber victimization has been linked to depressive symptoms (Bonanno & Hymel, 2013; Kowalski & Limber, 2013; Wright, 2014); anxiety and stress (Dempsey, Sulkowski, Nichols & Storch, 2009; Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Kowalski & Limber, 2013; Patchin & Hinduja, 2010; Wright, 2014); reduced physical health and course grades (Kowalski & Limber, 2013); loneliness, conduct problems, emotional problems, somatic symptoms, and substance misuse (Kowalski et al., 2014; Patchin & Hinduja, 2010); low self-esteem (Kowalski et al., 2014; Kowalski & Limber, 2013; Patchin & Hinduja, 2010); and suicidal ideation (Bonanno & Hymel, 2013; Kowalski et al., 2014; Kowalski & Limber, 2013; Patchin & Hinduja, 2010). Thus, it is important to

expand the scientific knowledge of cyber aggression in the hope that it can be prevented and that effective interventions for perpetrators can be developed.

Understanding Cyber Aggression

Cyber aggression overlaps with the construct of *cyberbullying* in that both rely on electronic communication; however, cyber aggression is typically considered a broad construct because it does not include the additional requirements of bullying (Pabian, De Backer, & Vandebosch, 2015; Wright & Li, 2013). Traditional (i.e., face-to-face) bullying has three requirements: intention to harm, an imbalance of power, and repetition (Olweus, 1993). In contrast, *cyber aggression* has been defined as, “intentional harm delivered by the use of electronic means to a person or a group of people irrespective of their age, who perceive(s) such acts as offensive, derogatory, harmful or unwanted” (Grigg, 2010, p. 152), omitting the requirements that the behavior be repetitive and involve a power differential. Thus, all cyberbullying could be considered a type of cyber aggression, but many instances of cyber aggression would not count as cyberbullying. *Trolling* has been defined as, “behaving in a deceptive, destructive, or disruptive manner in a social setting on the Internet with no apparent instrumental purpose” (Buckels, Trapnell, & Paulhus, 2014, p. 97) and involves online commenting behaviors. Thus, studies involving cyberbullying (e.g., Kowalski & Limber, 2013; Zetzlka & Seigfried-Spellar, 2016) or trolling (e.g., Buckels et al., 2014; Sest & March, 2017), while relevant, may not be assessing the full scope of cyber aggression.

There are several features of cyber aggression that help to distinguish it from traditional overt and relational aggression (Dempsey, Sulkowski, Dempsey, & Storch, 2011), some of which are particularly useful in understanding its impact. Technology

makes it possible for the aggressor to remain “invisible” and have their anonymity maintained because tracing the source of the aggression is difficult (Slonje & Smith, 2008; Zacchilli & Valerio, 2011). This may lead people to engage in cyber aggression when they might not have been aggressive otherwise (Zacchilli & Valerio, 2011). Other important features of cyber aggression involve the increased accessibility of the victim to the perpetrator and the potential for a much larger audience than would be typical of traditional bullying (Slonje & Smith, 2008; Zacchilli & Valerio, 2011). Victims of cyber aggression may never feel safe from perpetrators who can aggress at any time and from any location without necessarily revealing their identity and who can easily publicize their attacks (Zacchilli & Valerio, 2007; 2011).

The question of why those who perpetrate cyber aggression might choose to do so remains open; however, Runions, Bak, and Shaw (2017) proposed a quadripartite typology outlining numerous forms of online aggressive behaviors involving the perpetrator’s intent and self-control based on Howard’s (2011) Quadripartite Violence Typology (QVT). The QVT defines cyber aggression as either appetitive or aversive (i.e., the act either creating positive affect in the aggressor or removing negative affect from the aggressor) and either impulsive or controlled (Runions et al., 2017). Thus, four typologies arise: aversive/controlled, aversive/impulsive, appetitive/controlled, and appetitive/impulsive. This four-factor model was validated with an undergraduate sample, suggesting that most college students who engage in cyber aggression have either appetitive or aversive motives and are controlled or impulsive in their actions (Howard, 2017; Runions et al., 2017). Accordingly, it is advantageous to keep this typology in mind when examining potential predictors of cyber aggression.

Cyber Aggression Among Emerging Adults

Emerging adulthood, the developmental period ranging from 18 to roughly 29, is distinct from adolescence and young adulthood because of five distinguishing features: identity exploration, instability, self-focus, feeling in-between, and possibilities/optimism (Arnett, Žukauskienė, & Sugimura, 2014). Emerging adults often struggle with identity development as they work to discover who they are in regard to their self-concept, career, and social circle. These features, combined with the substantial use of technology among persons in this age range (Pew Research Center, 2019), may lead emerging adults to be especially vulnerable to cyber aggression and victimization (Kellerman et al., 2013). The correlates of cyber aggression perpetration among emerging adults include previous victimization (Gibb & Devereaux, 2014; Kellerman et al., 2013; Kokkinos, Antoniadou, & Markos, 2014; Zacchilli & Valerio, 2011), age (Barlett & Coyne, 2014), increased Internet use (Kokkinos et al., 2014), previous cyber aggression perpetration (Wright, 2013), sadism (Craker & March, 2016; Sest & March, 2017), moral disengagement (Pornari & Wood, 2010), and the Dark Triad personality traits, particularly psychopathy (Gibb & Devereaux, 2014; Goodboy & Martin, 2015; Kokkinos et al., 2014; Nocera & Dahlen, 2018). Cyber aggression perpetration has been associated with depression (Kokkinos et al., 2014; Selkie, Kota, Chan, & Moreno, 2015), anxiety and social anxiety (Kokkinos et al., 2014), and problem alcohol use (Selkie et al., 2015). Several findings indicate no gender differences in the prevalence of cyber aggression perpetration (Zacchilli & Valerio, 2011), although most findings suggest some differences (Barlett & Coyne, 2014; Francisco, Simão, Ferreira, & Dores Martins, 2015; Gibb & Devereaux, 2014; Kellerman et al., 2013; Kokkinos et al., 2014).

The prevalence of cyber aggression perpetration among emerging adults is unknown, as the rates reported in the extant literature vary between 1.5% and 68.6% (Calvete, Orue, Estevez, Villardon, & Padilla, 2010; Gibb & Devereaux, 2014; Hinduja & Patchin, 2009; Kellerman et al., 2013; Kokkinos et al., 2014; Slonje & Smith, 2008; Whittaker & Kowalski, 2015; Zacchilli & Valerio, 2011). This variability is likely due to differences in how cyber aggression is defined and measured, sample-specific characteristics (e.g., differences in composition by gender, race, frequency of Internet use), and rapid changes in electronic communication technology over time. Gibb and Devereaux (2014) reported that 52% of their college student sample reported engaging in cyber aggression; however, they only assessed a subset of cyber aggression behaviors, suggesting that this number would have been higher if they had been more inclusive. In addition, many studies of cyber aggression have used measures with questionable psychometric properties, many of which were adapted from measures developed for children or early adolescents without providing evidence to support their use among emerging adults (Done, Kelley, Chiang, & Padilla, 2013). Moreover, Barlett and Coyne (2014) found that the year of publication moderated the relationship between cyber aggression and gender, suggesting that the behavior may change over time as electronic communication develops. Thus, research on cyber aggression would benefit by assessing clearly defined constructs with psychometrically sound measures developed for the population of interest and general enough to postpone obsolescence (e.g., measures that reference specific social media platforms will become obsolete quicker than those that do not).

Aside from its name, the Cyberbullying Experiences Survey Perpetration Scale (CESP; Doane et al., 2013) meets most of these requirements. It was developed for use with emerging adults, assesses multiple facets of the cyber aggression construct (i.e., public humiliation, unwanted contact, malice, and deception) across various electronic media (e.g., social media platforms, text messaging, email), and has impressive evidence to support its internal consistency (Doane et al., 2013; Doane, Pearson, & Kelley, 2014; Snyman & Loh, 2015) and convergent validity as a means of assessing cyber aggression perpetration and victimization (Doane et al., 2014; Snyman & Loh, 2015). Although the CESP has the term *cyberbullying* in its name, its utilization of various facets and its omission of the requirement that the behaviors be repetitive or specifically motivated (e.g., reactive or proactive) is consistent with the broader construct of cyber aggression.

Predictors of Cyber Aggression

Based on Howard's (2011) theory of aggressive factors, as well as the empirical support for these constructs predicting other forms of aggression (Cleckley, 1941; Buckels, Jones, & Paulhus, 2013; Archer & Webb, 2006; Rupp & Vodanovich, 1997), we expected that psychopathy (appetitive/impulsive), sadism (appetitive/controlled), boredom proneness (aversive/impulsive), and trait aggression (aversive/controlled) would predict the perpetration of cyber aggression, and that moral disengagement would mediate these relationships.

Psychopathy

Psychopathy has been defined as a combination of interpersonal (e.g., grandiosity, arrogance, callousness) and affective (e.g., short-tempered, lack of guilt or empathy) characteristics leading to antisocial behaviors and social deviancy (e.g., aggression,

impulsivity, irresponsibility; Cleckley, 1941; Hare, 1999; Hare, 2003). Patrick, Fowles and Krueger's (2009) triarchic model of psychopathy aimed to disentangle opposing explanations and outline the themes (i.e., disinhibition, boldness, and meanness) within psychopathy research (Sellbom, Wygant, & Drislane, 2015). Disinhibition refers to the propensity to act impulsively or seek immediate gratification and an inability to regulate affect or restrain from urges (Krueger, Markon, Patrick, Benning, & Kramer, 2007). Boldness, sometimes labeled as fearless dominance, involves emotional resilience, thrill-seeking behaviors, high levels of confidence, and social effectiveness (Patrick et al., 2009; Stanley, Wygant, & Sellbom, 2013). Lastly, meanness includes decreased empathy, a deficiency of close relationships, exploitation, dishonesty, empowerment through cruelty, and rebelliousness (Patrick et al., 2009; Stanley et al., 2013). It is this combination of traits (e.g., impulsivity, exploitation) that aligns with the appetitive/impulsive QVT facet (Howard, 2011).

Among the Dark Triad traits (i.e., psychopathy, narcissism, and Machiavellianism), psychopathy is often described as the most treacherous (Paulhus & Williams, 2002). Psychopathic traits have been associated with a number of unfavorable correlates, including risky sexual behavior (Fulton, Marcus, & Payne, 2010), overt and relational aggression (Schmeelk, Sylvers, & Lilienfeld, 2008; Van Baardewijk, Stegge, Bushman, & Vermeiren, 2009), violent criminal history (Campbell, Porter, & Santor, 2004), recidivism (Harris, Rice, & Cormier, 1991), traditional bullying (Antoniadou, Kokkinos, & Markos, 2016; Baughman, Dearing, Giammarco, & Vernon, 2012; Fanti & Kimonis, 2012; Ragatz et al., 2011), and differences in morals (Mededovic & Petrovic, 2016). Moreover, several studies have found that psychopathic traits are positively

related to cyber aggression among emerging adults (Craker & March, 2016; Goodboy & Martin, 2015; Kokkinos et al., 2014; Nocera & Dahlen, 2018). Unfortunately, few of these studies used psychometrically sound measures of cyber aggression developed for use with emerging adults, and many used brief measures of psychopathic traits which are not always suitable to adequately capture the construct. Thus, we expected that psychopathic traits would predict cyber aggression.

Sadism

Although it is normal to feel remorse after hurting another person, some people find pleasure in such malice (Buckels et al., 2013). Sadism has been defined as, “the direct achievement of pleasure from harming others” (Baumeister & Campbell, 1999, p. 211), which seems to directly relate to the appetitive facets of the QVT (Howard, 2011). Numerous studies have assessed sadistic behaviors in emerging adults (Book et al., 2016; Buckels et al., 2013; Chabrol, Bouvet, & Goutaudier, 2017; Plouffe et al., 2017; Reidy et al., 2011), and measures of “everyday sadism” (a subclinical form of sadism) such as the Comprehensive Assessment of Sadistic Tendencies (CAST) have been developed using emerging adult samples (Buckels & Paulhus, 2014).

As with psychopathy, sadism has been shown to relate to various antisocial behaviors and remains a construct in need of further evaluation regarding its utility in understanding cyber aggression perpetration (Buckels et al., 2013). Sadistic traits have been shown to predict a tendency to continue harming a victim who would not retaliate (Buckels et al., 2013), negative affect (Buckels et al., 2013), unprovoked aggression (Reidy et al., 2011), playing violent video games (Greitemeyer, 2014), and one’s morals (Mededovic & Petrovic, 2016) in young adult samples. There is also evidence linking

sadism to aspects of cyber aggression among emerging adults (Buckels et al., 2014; Craker & March, 2016; Geel et al., 2016). Similarly, Buckels and colleagues (2014) found that sadism was positively related to trolling behaviors and sadism was the sole unique predictor of trolling behaviors when the Dark Tetrad traits were assessed. Geel and colleagues (2016) also found that sadism predicted cyberbullying behaviors. Because trolling and cyberbullying are more restricted aspects of cyber aggression, we expected that sadistic traits would predict cyber aggression.

Trait Aggression

Trait aggression, defined by Strohmeier, Fandrem, and Spiel (2012) as “a stable tendency to hurt or attack someone else” (p. 696), is not only a theoretically relevant and empirically supported predictor of most forms of aggressive behavior; it is likely to reflect greater variability than either psychopathy or sadism in an emerging adult sample (Greitemeyer, 2015; Kalmoe, 2015; Pailing, Boon, & Egan, 2014). The most widely used self-report measure of trait aggression, the Buss-Perry Aggression Questionnaire (BPAQ; Buss & Perry, 1992), outlines four subtraits: physical, verbal, anger, and hostility. Buss and Perry (1992) described these subtraits as encompassing the cognitive (hostility), affective (anger) and behavioral (physical and verbal) components of trait aggressiveness. The BPAQ has been used extensively with emerging adults and has impressive support for its validity in the form of relationships between BPAQ scores, lab-based aggressiveness and life history of aggressive acts (Archer & Webb, 2006).

In research with college samples, trait aggression positively relates depression, anxiety, sensation seeking, negative urgency, and anger rumination (Anestis, Anestis, Selby & Joiner, 2009); direct and indirect acts of violence, partner aggression,

impulsiveness, dominance, and competitiveness (Archer & Webb, 2006); violent attitudes and beliefs (Kalmoe, 2015); and psychopathy, Machiavellianism, narcissism, and sadism (Greitemeyer, 2015). Thus, trait aggression relates to several variables relevant to the perpetration of cyber aggression (e.g., impulsivity, psychopathy, bullying; Buss & Perry, 1992; Greitemeyer, 2015; Kwak & Oh, 2017). Additionally, trait aggression is positively related to cyberbullying, traditional bullying, and exposure to violence; and negatively to self-control (Kwak & Oh, 2017). Thus, we expected that trait aggression would predict cyber aggression among emerging adults.

Boredom Proneness

Similar to trait aggression, boredom proneness is likely a trait that has more variability within non-clinical populations (e.g., emerging adults) than psychopathy and sadism (Watt & Vodanovich, 1999). Boredom proneness, sometimes described as trait boredom, refers to a stable personality characteristic reflecting one's tendency to experience feelings of boredom (LePera, 2011). If one thinks of state boredom as involving transient feelings of boredom (Farmer & Sundberg, 1986), then boredom proneness would describe one's overall propensity to feel bored across situations leading to attempts to alleviate such an unpleasant experience (LePera, 2011; Martin, Sadlo, & Stew, 2006). Consequently, someone high in boredom proneness may fall into the aversive facets of Howard's (2011) theory of aggressive typologies, specifically the aversive/impulsive facet.

The potential role of boredom proneness in cyber aggression perpetration among emerging adults has not been investigated; however, there are compelling reasons to expect it may be relevant. Boredom proneness and/or boredom susceptibility are

positively related to traditional bullying (Antoniadou et al., 2016), aggression (Rupp & Vodanovich, 1997; Dahlen et al., 2014) aspects of psychopathy (i.e., disinhibition; Drislane, Patrick, & Arsal, 2014), Internet use and misuse (Rotunda et al., 2003), and cyber aggression (Antoniadou et al., 2016). Feelings of boredom have been identified as one motivator of cyber aggression perpetration in several samples (Koban et al., 2018; Varjas et al., 2010). In assessing differences between cyber-bullies, cyber-bully/victims, and cyber-victims, cyber-bully/victims exhibited higher levels of boredom susceptibility suggesting this variable may be useful in predicting this subset of cyber aggression (Kokkinos et al., 2014). Thus, we expected that boredom proneness will predict cyber aggression.

Moral Disengagement: A Potential Mediator

Moral disengagement is a gradual self-regulatory process that allows people to behave in ways that conflict with their moral values without the cognitive and/or emotional distress (e.g., guilt; Bandura, 1991; Renati et al., 2012). Moral disengagement involves altering the perception of the behavior (moral justification, euphemistic labeling, advantageous comparison), the role the perpetrator plays (displacement of responsibility, diffusion of responsibility), the outcome (distortion of consequences), and the victim (dehumanization, attribution of blame; Bandura, 2002; Caprara, Tisak, Alessandri, Fontaine, Fida, & Paciello, 2014; Renati et al., 2012). Moral justification involves the mental altering of the behavior to be necessary for some moral purpose (i.e., honor). Euphemistic labeling includes using sanitized language to decrease the act's perceived cruelty. Advantageous comparison negates the behavior by comparing it to more egregious behaviors (Bandura, 2002; Paciello, Fida, Tramontano, Lupinetti, & Caprara,

2008). Displacement of responsibility and diffusion of responsibility involve minimizing the role the perpetrator plays by placing responsibility on an authority figure or group of involved individuals. Distortion of consequences discredits or disregards the damage caused by the act (Bandura, 2002). Dehumanization and the attribution of blame involve distorting the perception of the victim (i.e., dehumanization perceives the victim(s) as less than human, and attribution of blame places the responsibility on the victim).

The relationship between moral disengagement and aggression is well established, as there is a direct positive relationship between moral disengagement and aggression proneness, and negative relationships with guilt and prosocial behaviors (Bandura, 1991; Caprara et al., 2014; Paciello et al., 2008; Pornari & Wood, 2010; Wang Lei, Yang, Gao, & Zhao, 2017). Caprara and colleagues (2014) found that moral disengagement contributed to aggressive behaviors in emerging adults and that moral disengagement mediated the relationships from hostile rumination and irritability to aggression. Cyber aggression seems to have similar relations to moral disengagement as does traditional aggression, as cyber aggression is positively correlated with moral disengagement (Perren & Gutzwiller-Helfenfinger, 2012; Pornari & Wood, 2010). Renati and colleagues (2012) suggested that technology may provide a distinct context in which moral disengagement is included by design due to the indirect and potentially anonymous nature. We expected that moral disengagement would partially mediate the relationships of various personality variables (i.e., psychopathy, sadism, boredom proneness, and trait aggression) and cyber aggression perpetration.

The Present Study

The present study explored the relationship of psychopathic traits, sadistic traits, trait aggressiveness, boredom proneness, and moral disengagement to the perpetration of cyber aggression. Although each of these variables, aside boredom proneness, has been linked to cyber aggression in at least one previously published study, no studies have examined them simultaneously. Moreover, the partial mediation of moral disengagement on the relationships between psychopathic traits, sadistic traits, trait aggression, and boredom proneness on cyber aggression has not been investigated. This study aimed to inform our understanding of the mechanisms through which cyber aggression occurs. We used structural equation modeling (SEM) to test a model incorporating the relationships between psychopathy, sadism, trait aggression, boredom proneness, moral disengagement, and cyber aggression (see Figure 1).

The current study aimed to answer two primary research questions:

Question 1. Do psychopathic traits, sadistic traits, trait aggressiveness, and boredom proneness positively predict cyber aggression?

Question 2. Does moral disengagement partially mediate the relationships of each of the independent variables (i.e., psychopathic traits, sadistic traits, trait aggressiveness, and boredom proneness) to the perpetration of cyber aggression?

We predicted that psychopathic traits, sadistic traits, trait aggressiveness, and boredom proneness would positively predict cyber aggression (hypothesis 1) and that these relationships would be partially mediated by moral disengagement (hypothesis 2).

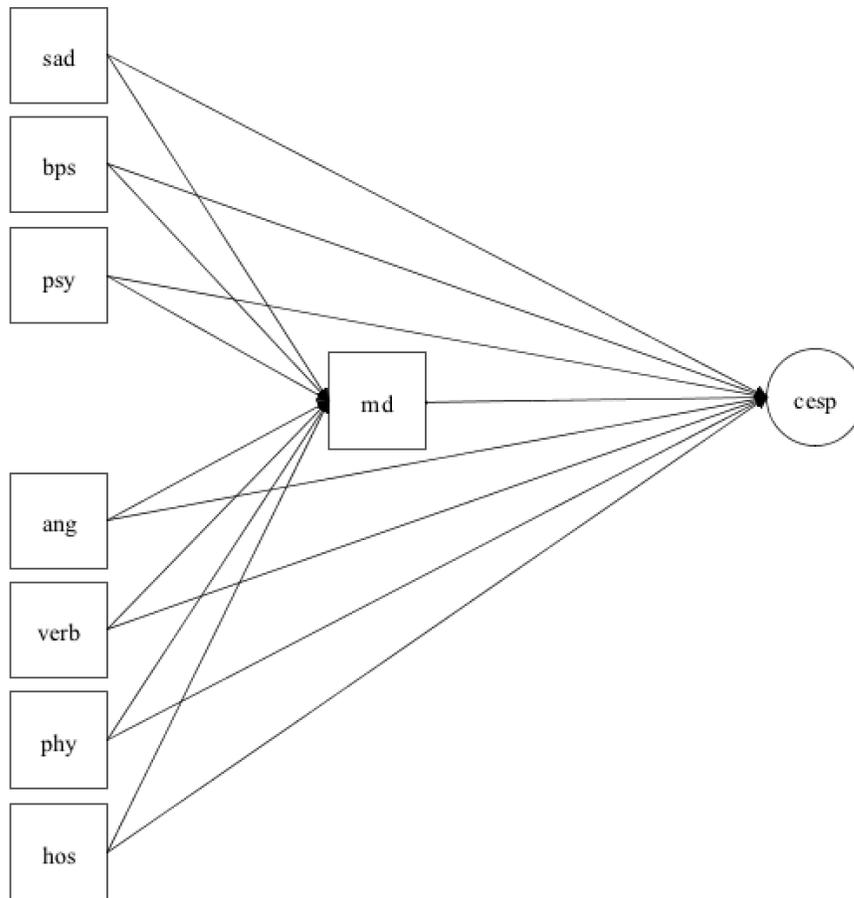


Figure 1. SEM model investigating the mediational effect of moral disengagement.

SAD = sadism, *PSY* = psychopathy, *VERB* = verbal aggression, *PHY* = physical aggression, *ANG* = anger, *HOS* = hostility, *BPS* = boredom proneness, *MD* = moral disengagement, *CESP* = cyberbullying experiences survey perpetration scale.

CHAPTER II - METHODS

Participants

The sample included 404 emerging adult ($M = 25.16$, $SD = 2.76$) volunteers living within the United States. The sample contained 167 men (41%) and 237 women (59%), and 44% of the sample was enrolled in college. Additional demographic information is presented in Table 1. The participants were recruited from Amazon's MTurk website. Those who provided their consent to participate (see Appendix A) were presented with a brief demographic and technology use questionnaire followed by the study instruments described below. All instruments were completed online through Qualtrics. Participants who completed the study without failing any of the quality assurance checks (described below) received monetary compensation (\$.25) for their involvement. Completion of the study took approximately 30 minutes. In this sample, the most frequently used social media site was Facebook, with 47.8% using this platform several times a day and only 5.9% never using this platform (see Table 2). Ultimately, 100% of the sample reported using at least one social media service, 95% reported using text messaging or text messaging apps, and 99.3% reported using email.

Table 1 *Participant Demographic Characteristics (N = 404)*

<i>Demographic</i>	<i>N</i>	<i>%</i>	<i>Demographic</i>	<i>N</i>	<i>%</i>
Gender			Enrolled in college		
Male	163	40%	Yes	180	45%
Female	237	58%	No	224	55%
Transgender	2	0.5%	Greek Status		
Other	3	0.7%	Yes	67	17%
Racial Identity			No	113	28%
African American	32	8%	Type of University		
Asian American	73	18%	Public/state	124	31%
Caucasian/White	264	65%	Private	47	12%
American Indian/Alaska Native	21	5%	Liberal Arts College	8	2%
Native Hawaiian/ Pacific Islander	3	0.7%	Religious Affiliated	1	0.2%
Other	11	3%	Size of School		
Ethnicity Identity			Less than 2,000 Students	17	4%
Hispanic or Latino/a	97	24%	2,000 – 5,000 Students	37	9%
Not Hispanic or Latino/a	307	76%	5,000 – 10,000 Students	36	9%
Region of U.S.			10,000 – 15,000 Students	29	7%
Northeast	84	21%	15,000 – 20,000 Students	18	5%
Southeast	30	7%	20,000 – 30,000 Students	21	5%
Southwest	78	19%	More than 30,000	22	5%
South Atlantic	67	17%	College Status		
Midwest	16	4%	Freshman	19	5%
West	23	6%	Sophomore	36	9%
Residential Status			Junior	36	8%

Table 1 continued

Dorm	23	6%	Senior	64	16%
Off-campus	81	10%	Graduate Student or other	28	7%
On-campus	31	8%			
With Parents	42	10%			
Fraternity/Sorority	3	0.7%			

Table 2 *Participant Social Media Use (N = 404)*

<i>Social Media Use</i>	<i>N</i>	<i>%</i>	<i>Social Media Use</i>	<i>N</i>	<i>%</i>
Facebook			Reddit		
Never	24	6%	Never	90	22%
Less than weekly	37	9%	Less than weekly	83	21%
Weekly	45	11%	Weekly	79	20%
Daily	105	26%	Daily	65	16%
Several times a day	193	48%	Several times a day	87	22%
Instagram			Twitter		
Never	39	10%	Never	83	21%
Less than weekly	47	12%	Less than weekly	67	17%
Weekly	62	15%	Weekly	80	20%
Daily	86	21%	Daily	87	22%

Table 2 continued

	Several times a day	169	42%	Several times a day	87	22%
	LinkedIn			Pinterest		
	Never	121	30%	Never	104	26%
	Less than weekly	112	28%	Less than weekly	105	26%
	Weekly	86	21%	Weekly	100	25%
	Daily	51	13%	Daily	59	15%
	Several times a day	34	8%	Several times a day	36	9%
	Google Plus			Tumblr		
	Never	186	46%	Never	180	45%
	Less than weekly	77	19%	Less than weekly	93	23%
	Weekly	66	16%	Weekly	50	12%
	Daily	37	9%	Daily	45	11%
	Several times a day	28	9%	Several times a day	36	9%
	Snapchat					
	Never	86	21%			
	Less than weekly	70	17%			
	Weekly	60	15%			
	Daily	69	17%			
	Several times a day	119	30%			

Instruments

We administered all instruments online using Qualtrics. The demographic and technology use questionnaire was presented first, followed by the Cyberbullying Experiences Survey. We randomized the order in which all subsequent instruments were presented to minimize potential order effects.

Participant Demographic and Technology Use Questionnaire

A brief demographic questionnaire and technology use questionnaire developed for this study was administered at the beginning of the survey to assess demographic information, confirm that participants qualified for the study's requirements (i.e., age 18-29, living in the United States), and collect information about participants' frequency and type of technology use (see Appendix B).

Cyberbullying Experiences Survey Perpetration Scale (CESP)

The CESP developed by Doane, Kelley, Chiang and Padilla (2013) was used to assess the participants' engagement in cyber aggression perpetration. The 20-item perpetration measure was developed for use in emerging adult populations. This measure has been utilized with various emerging adult samples and appears to be reliable and valid for use in emerging adult populations (Bauman & Baldasare, 2015; Doane et al., 2013; Doane et al., 2014; Snyman & Loh, 2015). Respondents rate each item using a 6-point Likert scale where response options range from 0 ("never") to 5 ("every day/almost every day"). The CESP yields both a total cyber aggression score (calculated by summing the item responses and then dividing by the number of items), as well as four subscales (i.e., malice, public humiliation, unwanted contact, and deception), which were used in the proposed study to confirm the factor structure and appropriate use of the total score.

The measure has demonstrated adequate internal consistency ($\alpha s = .77 - .94$) in emerging adult samples (Bauman & Baldasare, 2015; Doane et al., 2013; Snyman & Loh, 2015), as well as supportive evidence of content validity, construct validity, and convergent validity with other measures of cyber aggression perpetration (Bauman & Baldasare, 2015; Doane et al., 2013; Doane et al., 2014). Internal consistency for the present study was good ($\alpha s = .91 - .97$; see Table 3) and the scores ranged from 0.00 to 5.00.

Triarchic Psychopathy Scale (TriPM)

The 58-item TriPM, developed by Patrick (2010), was used to assess psychopathic personality traits. The measure was developed using the Triarchic Model of psychopathy which includes three facets: boldness, meanness, and disinhibition (Patrick, 2010). This measure has been utilized with emerging adult samples and appears to be reliable and valid for use in emerging adult populations (Blagov et al., 2015; Craig et al., 2013; Drislane et al., 2014; Hall et al., 2014; Sellbom & Phillips, 2013). Respondents rate each item using a 4-point Likert scale where response options range from 1 (“false”) to 4 (“true”). The scale yields both a total score, as well as three subscales (Boldness, Meanness, and Disinhibition). In this study, the total score was used (calculated by summing the item responses and then dividing by the number of items) which has demonstrated adequate internal consistency ($\alpha s = .76 - .90$) in emerging adult samples (Christian & Sellbom, 2016; Hall et al., 2014; Sellbom et al., 2015; Somma, Borroni, Drislane, & Fossati, 2016; Stanley et al., 2013), and satisfactory convergent validity with measures of coldheartedness and antagonism, (Sica et al., 2015) and construct validity (Blagov et al., 2015; Drislane et al., 2014; Sellbom & Phillips, 2013). Internal

consistency for the present study was good ($\alpha = .94$; see Table 3) and the scores ranged from 0.19 to 2.71.

Comprehensive Assessment of Sadistic Tendencies (CAST)

The 18-item CAST developed by Buckels and Paulhus (2014) was used to assess participants' engagement in sadistic tendencies. The measure has been utilized with college student samples and adults and appears to be reliable and valid for use in such populations (Buckels & Paulhus, 2014). Respondents rate each item using a 7-point Likert scale where response options range from 1 ("strongly disagree") to 7 ("strongly agree"). The scale yields both a total score, as well as three subscales (i.e., direct verbal sadism, direct physical sadism, and vicarious sadism). In this study, the total score was used (calculated by summing the item responses and then dividing by the number of items). The total score has demonstrated high internal consistency ($\alpha s = .75 - .89$) in emerging adult samples (Buckels & Paulhus, 2014; Buckels et al., 2014; Gonzalez & Greitemeyer, 2018). Additionally, the measure has shown evidence of construct (Buckels & Paulhus, 2014) and convergent (Plouffe et al., 2017) validity. Internal consistency for the present study was good ($\alpha = .95$; see Table 3) and the scores ranged from 0.00 to 5.11.

Moral Disengagement Measure

The Moral Disengagement Measure developed by Detert, Trevino, and Sweitzer (2008) was used to assess the participants' engagement in moral disengagement. The 32-item measure was developed using Bandura and colleagues' (1996, 2001) moral disengagement questionnaire, but was modified for use with emerging adult samples by Detert and colleagues (2008). This measure has been utilized with emerging adult

samples and appears to be reliable and valid for use in college populations (Chugh et al., 2014; Chowdhury & Fernando, 2014). Respondents rate each item using a 5-point Likert scale where response options range from 1 (“strongly disagree”) to 5 (“strongly agree”). The scale yields both a total score, as well as four subscales (moral justification, euphemistic labeling, advantageous comparison, displacement of responsibility, diffusion of responsibility, distortion of consequences, attribution to blame, and dehumanization). In this study, the total score was used (calculated by summing the item responses and then dividing by the number of items), which has demonstrated adequate internal consistency ($\alpha = .85- .89$) in emerging adult samples (Chowdhury & Fernando, 2014; Chugh et al., 2014; Detert et al., 2008). Internal consistency for the present study was good ($\alpha = .98$; see Table 3) and the scores ranged from 0.00 to 3.66.

Buss Perry Aggression Questionnaire Short Form (BPAQ-SF)

The 12-item BPAQ-SF, developed by Bryant and Smith (2001) and modified by Kalmoe (2015), was used to assess trait aggression. The BPAQ-SF is a brief version of Buss & Perry’s (1992) 29-item Aggression Questionnaire, which appears to have some psychometric advantages over the longer measure (Bryant & Smith, 2001). The original Aggression Questionnaire utilized a 7-point scale; however, the presence of a midpoint was often criticized (Bryant & Smith, 2001; Kalmoe, 2015). Although Bryant and Smith’s (2001) version utilized a 6-point scale with the same endpoints used in the original measure (i.e., “extremely uncharacteristic of me” to “extremely characteristic of me”), they recommended that researchers consider modifying the endpoints to improve respondent understanding. Kalmoe’s (2015) version maintained the same items and the same 6-point scale as Bryant and Smith’s (2001) version but modified the instructions of

the measure and the endpoints to “completely false for me” and “completely true for me.” The present study will use the 12-item BPAQ-SF developed by Bryant and Smith (2001) with Kalmoe’s (2015) modifications. That is, respondents rated each item on 6-point scale ranging 1 (“completely false for me”) to 6 (“completely true for me”). The scale yields a total score and the original four facet scores (physical aggression, verbal aggression, anger and hostility); however, Bryant and Smith (2001) cautioned against using the total score. The measure has demonstrated good internal consistency for facet scores (α s = .80 - .84), construct validity, discriminant validity, and convergent validity (Bryant & Smith, 2001; Kalmoe, 2015). As recommended by Bryant and Smith (2001), the order in which the 12 BPAQ-SF items are presented to participants was randomized once prior to entering them in Qualtrics so that every participant received the items in the same order as to enhance measurement validity while also allowing for easy replication. The randomized order of the items was 21, 23, 8, 25, 2, 11, 24, 20, 14, 15, 13, and 6 using Buss and Perry’s (1992) Table 1. Internal consistency for the present study was good (α s = .84 - .87; see Table 3) and the scores ranged from 0.00 to 5.00 for each subscale.

Boredom Proneness Scale (BPS)

The 28-item BPS developed by Farmer and Sundberg (1986) was used to assess the participants’ proneness to boredom. The measure has been utilized with emerging adult samples and appears to be reliable and valid for use in college populations (Dahlen et al., 2004, 2005; Farmer & Sundberg, 1986; Seib & Vodanovich, 1999; Sommers & Vodanovich, 2000; Watt & Blanchard, 1994; Watt & Vodanovich, 1999). Upon initial development, the items were true-false; however, various studies have successfully

employed a 7-point Likert scale in order to increase variability (Dahlen et al., 2004, 2005; McLeod & Vodanovich, 1991; Rupp & Vodanovich, 1997; Vodanovich & Kass, 1990; Watt & Blanchard, 1994). Respondents rate each item using a 7-point Likert scale where response options range from 1 (“highly disagree”) to 7 (“highly agree”). The scale yields a total boredom proneness score (calculated by summing the item responses and then dividing by the number of items). The measure has demonstrated adequate internal consistency ($\alpha = .79 - .86$; Farmer & Sundberg, 1986; LePera, 2011; Seib & Vodanovich, 1999; Watt & Blanchard, 1994; Watt & Vodanovich, 1999) and test-retest reliability ($r = .83$) over a one week interval in emerging adult samples (Farmer & Sundberg, 1986). Additionally, the measure has shown evidence of convergent validity through associations with self-ratings of boredom and other boredom measures (Farmer & Sundberg, 1986). Internal consistency for the present study was good ($\alpha = .92$; see Table 3) and the scores ranged from 0.00 to 6.00.

Table 3 Means, Standard Deviations, Alpha Coefficients, and Correlations for All Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. PED	---											
2. PEUC	.89	---										
3. PEM	.76	.80	---									
4. PEPH	.84	.95	.81	---								
5. MD	.76	.80	.72	.80	---							
6. SAD	.77	.82	.74	.82	.88	---						
7. BPS	.59	.59	.54	.59	.67	.63	---					
8. PSY	.69	.74	.69	.75	.82	.80	.70	---				
9. ANG	.64	.66	.59	.65	.73	.69	.61	.71	---			
10. VERB	.61	.62	.64	.62	.73	.70	.63	.68	.80	---		
11. PHY	.69	.71	.68	.71	.80	.80	.61	.77	.77	.78	---	
12. HOS	.51	.53	.52	.53	.61	.56	.59	.62	.77	.68	.67	---
<i>Mean</i>	1.22	.99	1.57	.99	1.43	1.93	3.28	1.39	1.79	1.97	1.66	2.20
<i>SD</i>	1.46	1.44	1.37	1.46	1.02	1.63	.99	.46	1.43	1.42	1.54	1.48
α	.91	.97	.93	.93	.98	.95	.92	.94	.86	.85	.87	.84

Note. PED = CESP- Deception; PEUC = CESP- Unwanted Contact; PEM = CESP- Malice; PEPH = CESP- Public Humiliation; MD = Moral Disengagement; SAD = Sadism; ANG = Anger; VERB = Verbal Aggression; PHY = Physical Aggression; HOS = Hostility; BPS = Boredom Proneness; PSY = Psychopathy

Procedure

Amazon's Mturk was used to recruit potential participants. In order to qualify for the study, participants must have the MTurk Masters Qualification (i.e., a classification determined by MTurk which identifies high performing participants), be between the ages of 18 and 29 and be currently living within the United States. Potential participants who signed up for the study after reading a brief description were provided with a URL taking them to a consent form hosted on a secure web-based system (i.e., Qualtrics). After reading and electronically signing the online consent form, participants were assigned a randomly generated MTurk worker code and all identifying information obtained was deleted from the data set (i.e., participant names). Participants were directed to a brief demographic and technology use questionnaire, followed by the CESP, and all other study instruments in a randomized order. Qualtrics quotas were utilized to obtain more balanced numbers of college and non-college participants. Consistent with published recommendations on the importance of detecting careless responding in online survey research (e.g., Meade and Craig, 2012), two directed response items were included in the survey instruments. Each item instructed respondents to answer in a particular way (e.g., "Answer 'unlike me' to this question"). Participants who failed to answer either item as instructed were flagged so their responses could be eliminated from analyses. Overall study and questionnaire-specific completion time were also assessed to provide another way of screening the data for insufficient effort responding. Participants who completed the study in under than 3 minutes were excluded from the analysis after it was determined that they would not be able to complete the survey within this time while still reading every item. Participants who completed the study without failing the quality

assurance checks received \$.25 based on the expected 30-minute completion time. The study procedures were approved by the Institutional Review Board at the researchers' university (see Appendix C).

CHAPTER III - RESULTS

Data Screening

Initial data screening began prior to completing data collection by identifying MTurk workers who failed to meet inclusion criteria or did not reach the end of the survey (i.e., those who were routed out of the survey after failing quality assurance checks). This resulted in the exclusion of 469 workers (159 men, 310 women) out of 943 workers. Additionally, 70 workers (24 men, 1 woman, and 45 workers who failed to report their sex) were excluded as the result of providing only missing data following the demographic and technology use questionnaire. These workers were not provided compensation per policies outlined in the consent form. Qualtrics quotas used to improve the distribution of workers by sex and college status were examined throughout data collection and adjusted as needed.

The aforementioned procedures resulted in a final sample ($N = 404$) of 167 men (41%) and 237 women (59%) in which 44% of the sample was currently enrolled in college and 55% was not. Once this sample was attained via MTurk, the data were exported to an SPSS data file and examined for errors (i.e., via scale-level frequency distributions). Two workers were missing data for one item each. These missing data points were replaced using the scale mean for each worker. For example, one case was missing a response for one item on the CAST. The mean score for this measure for this worker was obtained and used to replace the missing response.

Preliminary Analyses

All measures were scored via SPSS syntax according to their respective manual and/or scoring procedure provided by the authors. Alpha coefficients, descriptive

statistics, and bivariate correlations among variables were computed (see Table 3). All measures yielded adequate alpha coefficients ($\alpha \geq .84$; see Table 3). All variables were tested for normality; however, due to the use of M-Plus 7.11 (Muthen & Muthen, 2012) which allows for non-normally distributed data no transformations were employed. Bivariate correlations revealed significant correlations among all study variables. Of note, psychopathic traits, sadistic traits, boredom proneness, all four forms of trait aggression, and moral disengagement were positively related to all forms of cyber aggression perpetration (i.e., deception, unwanted contact, malice, and public humiliation). A 2 (sex) x 2 (college status) ANOVA was performed to examine potential sex differences in cyber aggression perpetration, examined via the total score, as well as potential differences between college students and non-college students. There were significant main effects for sex ($F(1, 400) = 10.30, p = .001, \eta^2 = .03$) and college enrollment ($F(1, 400) = 18.13, p < 0.001, \eta^2 = .04$). Men reported more cyber aggression perpetration than did women, and participants enrolled in college reported more cyber aggression perpetration than those not enrolled in college. The sex by college status interaction was not significant ($F(1, 400) = .89, p = ns, \eta^2 = .01$).

Primary Analyses

Prior to testing the full hypothesized model, a confirmatory factor analysis (CFA) was conducted on the Cyberbullying Experiences Survey Perpetration scale (Doane et al., 2013) to assess the utility of this measure in the full model. The model fit statistics revealed a root mean-square error of approximation (RMSEA = 0.192, 90% Confidence Interval 0.137- 0.253), comparative fit index (CFI = 0.985), Tucker Lewis Index (TLI = 0.956), and standardized root mean square residual (SRMR = .025). Both the CFI, TLI,

and SRMR indicated acceptable to good fit ($> .95$ and $< .08$, respectively); however, the RMSEA indicated poor fit, as it was greater than 0.08. It should be noted that the RMSEA tends to be amplified when examining models with low degrees of freedom, as was the case with the current model (Kenny, Kaniskan, & McCoach, 2015). All indicator variables loaded significantly onto the latent variable ($\beta > 0.82$). Modification indices provided no significant alterations in the authors' proposed factor structure. Due to the primary hypothesis aiming to confirm the full model versus only the measurement model, the theoretical backing for a four-factor model (Doane et al., 2013), and the significant loadings for each indicator, the original factor structure proposed by Doane and colleagues (2013) was confirmed and entered into the full model analysis.

Using M-Plus 7.11 (Muthen & Muthen, 2012), the mediation model was tested via structural equation modeling (SEM) to investigate hypothesis 1 and 2. Bootstrapping was used to determine the mediational effect of moral disengagement within the model. Although some of the independent variables have been shown to be highly correlated in previous studies (e.g., psychopathy and sadism), we decided not to add correlations among them in the SEM in order to obtain a clearer sense of their unique contributions in the context of the other variables. Similarly, we did not include covariates such as gender or college vs. non-college status because we did not have a clear a priori reason to do so. Fit statistics for the full SEM model include: RMSEA = 0.082 (90% CI 0.065-0.100), TLI = 0.963, CFI = 0.979, and SRMR = 0.025. These results signify acceptable fit. The model was, therefore, retained. In examining specific direct relationship significance, it was predicted that all of the independent variables, as well as the mediator variable, would predict cyber aggression perpetration (hypothesis 1). Hypothesis 1 was partially

supported in that anger ($p = 0.005$, $\beta = 0.136$), moral disengagement ($p < 0.000$, $\beta = 0.0268$), and sadism ($p < 0.000$, $\beta = 0.447$) directly predicted cyber aggression perpetration (see Figure 2). The effect sizes, as determined by the completely standardized indirect effect (Preacher & Kelley, 2011), indicated a small effect (e.g., $\beta > 0.1$ and < 0.3) for the pathway from anger and moral disengagement to cyber aggression, and a medium effect (e.g., $\beta > 0.3$ and < 0.5) for the pathway from sadism to cyber aggression (Cohen, 1988). Therefore, the direct relationships from the additional independent variables (i.e., boredom proneness, psychopathy, verbal aggression, physical aggression, and hostility) to cyber aggression were not significant, and thus, these variables did not predict cyber aggression.

To begin assessing hypothesis 2, the relationships between the independent variables and moral disengagement were examined. Sadism, psychopathy, and physical aggression predicted moral disengagement, while anger, verbal aggression, hostility, and boredom proneness did not. However, as noted previously, psychopathy did not directly predict cyber aggression without the addition of the mediator ($p = 0.073$, $\beta = 0.110$). Due to the lack of significant direct effect, this is not defined as a full mediation. Also of note, unlike the direct or total effect, the indirect effect for physical aggression was significant, due to the significance of the pathway from physical aggression to moral disengagement ($p = 0.034$, $\beta = 0.107$). The path from verbal aggression to moral disengagement was approaching significance ($p = 0.058$, $\beta = 0.074$).

Lastly, the mediational effect of moral disengagement between the IVs and cyber aggression perpetration was evaluated (hypothesis 2). It was predicted that the relationships between the independent variables and cyber aggression would be partially

mediated by moral disengagement. Bootstrap analyses suggested that hypothesis 2 was partially supported in that moral disengagement partially mediated the relationship between cyber aggression perpetration and sadism at the 95% confidence interval (see Table 4). The proportion of variance (as calculated by the formula ab/c) in cyber aggression perpetration mediated by moral disengagement for sadism was 22.39%. Regardless of the significance of the indirect and total effects for psychopathy, no mediation occurred due to the nonsignificant direct effect, or c' (Muthen, 2011). On the other hand, even with a significant direct effect for anger, the lack of significant indirect effects signifies that no mediation occurred.

Table 4 *Standardized Total, Direct, and Indirect Effects*

	SAD	ANG	VERB	PHY	HOS	BPS	PSY
Total	0.576	0.153	-0.038	0.054	-0.026	0.038	0.169
Direct	0.447	0.136	-0.058	0.025	-0.029	0.024	0.110
Indirect	0.129	0.017	0.020	0.029	0.002	0.014	0.059
95% CI Total	(0.061, 0.211)	(-0.004, 0.052)	(0.001, 0.049)	(0.004, 0.060)	(-0.016, 0.024)	(-.006, 0.042)	(0.023, 0.107)
Indirect							

Note. All significant effects are bold ($p < .05$). SAD = Sadism; ANG = Anger; VERB = Verbal Aggression; PHY = Physical Aggression; HOS = Hostility; BPS = Boredom Proneness; PSY = Psychopathy

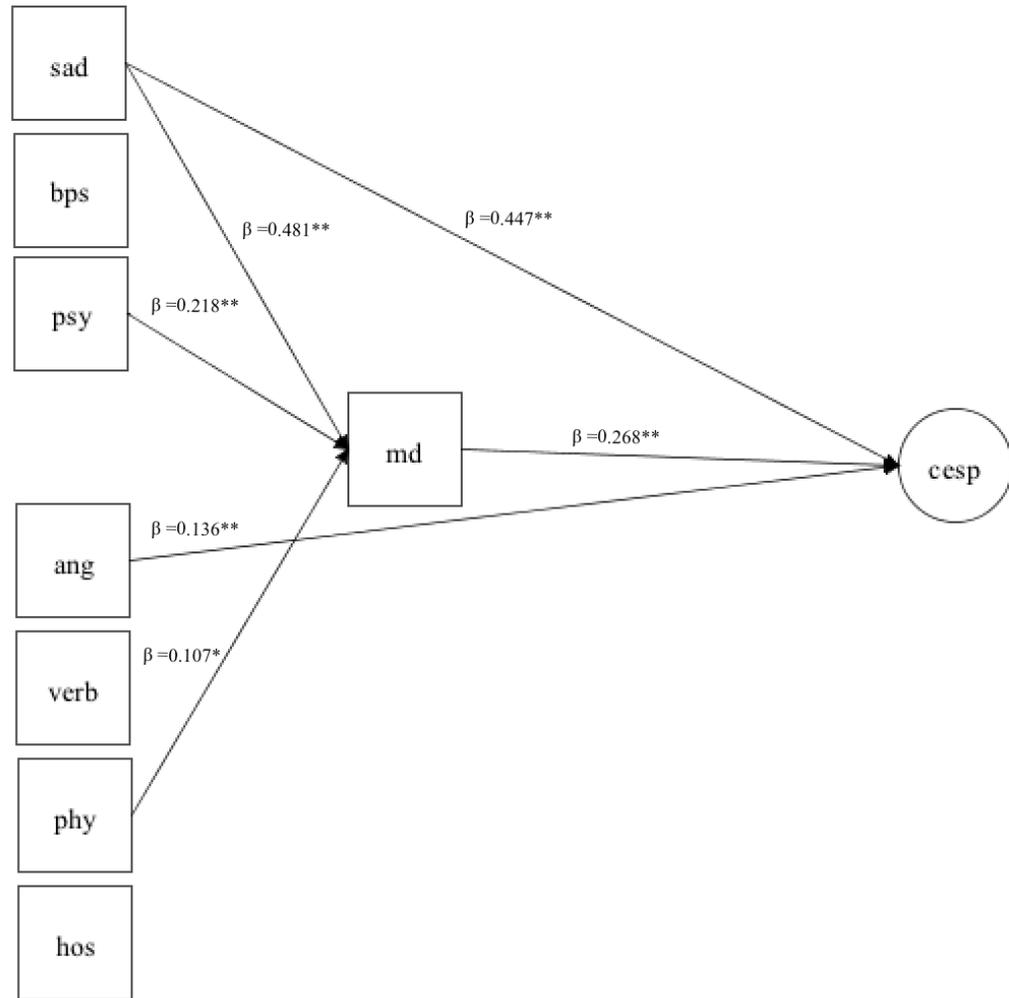


Figure 2. SEM with only significant pathways and associated estimates.

SAD = sadism, PSY = psychopathy, VERB = verbal aggression, PHY = physical aggression, ANG = anger, HOS = hostility, BPS = boredom proneness, MD = moral disengagement, CESP = cyberbullying experiences survey perpetration scale. Note. ** = $p < .01$; * = $p < .05$

CHAPTER IV – DISCUSSION

Emerging adulthood (i.e., the period from 18 to 29 years of age) involves considerable identity exploration, instability, and interpersonal conflict (Arnett et al., 2014; Kellerman et al., 2013), as well as substantial technology use (Pew Research Center, 2019). As such, emerging adults are at increased risk of experiencing cyber aggression and may show more vulnerability to its effects (Arnett et al., 2014; Kellerman et al., 2013). Unfortunately, research on cyber aggression among emerging adults has been limited due to differences in the operationalization of cyber aggression, the lack of psychometrically sound measures assessing these behaviors among emerging adults, and rapid changes in social media platforms, instant messaging apps, and other technologies (Doane et al., 2013). While it is tempting to assume that most of the literature on other forms of aggression (i.e., overt and relational) applies to cyber aggression, this may not be the case given that acts of cyber aggression are more likely to be anonymous, viewed by a much larger audience, and longer-lasting than most other forms of aggression. Moreover, these characteristics appear to increase negative effects of cyber victimization when compared to physical victimization (Bonanno & Hymel, 2013; Slonje & Smith, 2008; Wright, 2016; Zacchilli & Valerio, 2011).

The current study examined psychopathic and sadistic traits, trait aggression (i.e. anger, hostility, physical aggression, verbal aggression), and boredom proneness as potential predictors of cyber aggression perpetration, with moral disengagement as a potential mediator, in an emerging adult sample recruited via MTurk. When all variables were examined together using SEM, only physical aggression, sadism, and psychopathic traits predicted moral disengagement; only anger, sadism, and moral disengagement

directly predicted cyber aggression perpetration; and moral disengagement partially mediated the relationship between sadism and cyber aggression perpetration. Thus, the key findings of the present study were as follows: (1) the factor structure of the Cyberbullying Experiences Survey was confirmed, providing further evidence that this is a psychometrically sound measure of cyber aggression among emerging adults; (2) sadistic traits and trait anger were the most useful predictors of cyber aggression perpetration in this sample when considered along with psychopathic traits, boredom proneness, and the other components of trait aggression; and (3) moral disengagement partially mediated the relationship between sadistic traits and cyber aggression perpetration. The present study advanced the literature on cyber aggression among emerging adults in several important ways, which are addressed below.

Assessing Cyber Aggression Perpetration Among Emerging Adults

Research on cyber aggression has been limited by the lack of psychometrically sound measures of cyber aggression suitable for use with emerging adults. Many studies have used measures developed for children or early adolescents without providing support for their validity as measures of cyber aggression with emerging adult samples. The Cyberbullying Experiences Survey (CES; Doane et al., 2013) is a noteworthy exception that was developed for use with emerging adults and has evidence to support its reliability and validity with this population. By confirming the factor structure of the CESP suggested by Doane and colleagues (2013) in a sample that included both college and non-college emerging adults, we extended previous work on this measure. Our results suggest that the CESP and the four factors of cyber aggression perpetration posited by Doane and colleagues (i.e., malice, public humiliation, unwanted contact, and

deception) are appropriate for emerging adults, regardless of their college status. Our analyses revealed significant loadings for the four CESP subscales, as well as acceptable model fit. Each subscale was sufficiently reliable, with alpha coefficients $> .70$ (Cortina, 1993). This provides additional support for the use of the CESP in assessing cyber aggression perpetration and for viewing cyber aggression as a multidimensional phenomenon. Future cyber aggression research may benefit from examining the CES Victimization scale, which we did not use in the present study, as well as determining how the CESP performs with differing samples (e.g., invariance testing to compare the factor structure across samples differing by gender, ethnic/racial identity, socioeconomic status, or geographic location). It appears that one of the ways the CESP differs from many other measures of cyber aggression is its inclusion of more covert aspects of cyber aggression than found on other measures (e.g., acts of deception and unwanted contact). This may be advantageous in that the CESP is likely to provide a fuller perspective on cyber aggression.

Dark Personality Traits and Cyber Aggression Perpetration

Although both psychopathic and sadistic traits were positively related to cyber aggression perpetration at the bivariate level, sadism but not psychopathy predicted cyber aggression perpetration when all variables were included. The finding that psychopathic traits did not predict cyber aggression perpetration in the full model was unexpected, as psychopathic traits have usually predicted cyber aggression in prior studies (Craker & March, 2016; Geel, Goemans, Toprak, & Vedder, 2016; Goodboy & Martin, 2015; Kokkinos et al., 2014; Nocera & Dahlen, 2018). On the other hand, most of the prior studies that have examined the relationship of psychopathic traits to cyber aggression

perpetration used measures of cyber aggression developed for adolescents and brief measures of psychopathy and did not include measures of sadistic traits or boredom proneness. It is possible that sadism, boredom proneness, or one of the other variables obscured the contribution of psychopathic traits. The strong positive relationship between psychopathy and sadism obtained in the present study ($r = .80$) is consistent with previous studies (Holt, Meloy, & Strack, 1999; Chabrol, Leeuwen, Rodgers, & Sejourne, 2009; Reidy, Zeichner, & Seibert, 2011); however, numerous studies have reported differences between the two constructs. For example, Paulhus (2014) noted that psychopathy independently includes impulsivity, manipulation, criminality, and grandiosity, and sadism independently includes the enjoyment of cruelty. Book and colleagues (2016) found that sadism and psychopathy differed with regard to their correlates (e.g., HEXACO Honesty-Humility predicted psychopathy, and HEXACO Emotionality predicted sadism). These differences may be relevant when interpreting this study's results in that the enjoyment of suffering in others may be more relevant to cyber aggression perpetration. Impulsivity, which seems more relevant to psychopathy than sadism, may also impact the effects of other variables on cyber aggression, which, at times, requires increased proactivity (Runions, 2013). Additionally, specific aspects of psychopathy, including impulsivity, may be interacting with other variables in the model leading psychopathy to not predict cyber aggression.

A series of *post hoc* analyses in which the SEM was repeated without certain variables suggests that boredom proneness may be most responsible for obscuring the relationship of psychopathic traits to cyber aggression perpetration. When we removed boredom proneness from the model, psychopathic traits predicted cyber aggression

perpetration ($\beta = .12, p = .013$) even when sadistic traits remained in the model. Thus, psychopathic traits are likely still relevant to the perpetration of cyber aggression, but some of their contribution in the present study may have been masked by boredom proneness. We attribute this to the overlap between boredom proneness and the disinhibition aspect of psychopathy which includes acts of impulsivity and a lack of restraint from urges and immediate gratification (Krueger, Markon, Patrick, Benning, & Kramer, 2007). This overlap was further highlighted by Patrick (2010) developing the TriPM scales directly from the Externalizing Spectrum Inventory (ESI; Patrick, Kramer, Krueger, & Markon, 2013) which includes a specific boredom proneness factor. It should also be noted that psychopathic traits predicted moral disengagement which predicted cyber aggression perpetration. This suggests that individuals with higher levels of psychopathic traits may be more likely to utilize moral disengagement, which in turn is associated with higher levels of cyber aggression perpetration.

Anger in Cyber Aggression Perpetration

Of the four factors of trait aggression assessed with the BPAQ-SF (i.e., physical aggression, verbal aggression, anger, and hostility), only anger predicted cyber aggression perpetration. The General Aggression Model (GAM; Anderson, & Bushman, 2018) may be helpful in understanding these results. In the GAM, both anger and hostility are within the present internal state element of aggression decision making. Perhaps, in this sample, anger was the more influential aspect of a perpetrator's internal state leading to aggressive behaviors online. The fact that anger but not hostility predicted cyber aggression may also be explained by proactive and reactive forms of aggression, as reactive aggression is historically associated with anger and proactive aggression is

typically more cognitive (Bushman & Anderson, 2001). Our findings may indicate that the current sample's tendency for cyber aggression reflects a greater impact for affect than cognition (e.g., heightened hostile affect and lesser thought related to the act) and thus, more reactive sources of such behaviors. This may also explain why anger was not predictive of moral disengagement, as disengagement involves more cognitive features that are present in proactive versus reactive aggression (Frey, Strong, & Onyewuenyi, 2017) and anger may be viewed as an excuse for such behavior.

The notion that physical and verbal aggression are both behavioral components of trait aggression and cyber aggression is a form of indirect aggression may help to explain why physical and verbal aggression did not predict cyber aggression. As described by the effect/danger ratio (Bjorkqvist, Osterman, & Lagerspetz, 1994), individuals may deny direct forms of aggression due to a higher probability of negative consequences and a lower probability of the act being effective related to the desired outcome. As such, perpetrators may view cyber aggression as a less consequential form of aggression when they are experiencing heightened hostile affect due to the anonymity of cyber aggression (Slonje & Smith, 2008), leading people to engage in this aggression regardless of their tendency to engage in verbal or physical aggression. Ultimately, these results highlight the importance of the affective component of aggression to cyber aggression perpetration versus the behavioral (physical and verbal aggression) and cognitive (hostility) components. While this does not necessarily mean that these other components are irrelevant, it suggests that anger may be more relevant, at least in the context of this model.

Moral Disengagement in Cyber Aggression Perpetration

The present study extended the literature on moral disengagement by showing that it is relevant to cyber aggression in many of the same ways it is for traditional forms of overt aggression (Gini, Pozzoli, & Hymel, 2014; Li et al., 2014; Obermann, 2011; Paciello et al., 2008). Our results were also consistent with those reporting significant relationships between a component of cyber aggression, cyberbullying, and moral disengagement (Pornari & Wood, 2010; Wang, Lei, Liu, & Hu, 2016). This highlights the importance of examining moral disengagement as a mediator between predictors and *cyber aggression* perpetration, as this has seldom been examined in the current literature base.

Some of our findings with respect to moral disengagement (i.e., it was positively related to cyber aggression perpetration, predicted by psychopathic and sadistic traits, and partially mediated the relationship between sadistic traits and cyber aggression perpetration) were consistent with prior research demonstrating positive relationships between moral disengagement and aggressive acts (Bandura, 1999; Bandura et al., 1996, 2001; Caprara et al., 2014; Gini, Pozzoli, & Bussey, 2015; Paciello et al., 2008) and with previous studies showing relationships between moral disengagement and Dark Triad traits (Egan, Hughes, & Palmer, 2014; Roeser, McGregor, Stegmaier, Mathew, Kubler, & Meule, 2016). In the present study, individuals engaging in increased moral disengagement techniques were higher in sadistic and psychopathic traits and individuals reporting increased cyber aggression perpetration tended to employ more moral disengagement techniques. Thus, moral disengagement helped to explain the relationship between sadism and cyber aggression. Ultimately, the relationships between these dark

personality traits and moral disengagement may reflect the impact of empathy, trait cynicism, chance locus of control, and moral identity on proneness to moral disengagement (Detert et al., 2008).

On the other hand, moral disengagement did not perform as expected in all areas. There was no evidence that it mediated the relationships of aggression, psychopathic traits, and boredom proneness to cyber aggression perpetration. With the variables that did not directly predict cyber aggression (i.e., boredom proneness, psychopathy, verbal aggression, physical aggression, and hostility), the lack of mediation is attributed to a lack of relationship for moral disengagement to mediate. Although, anger predicted cyber aggression perpetration, this relationship was not mediated by moral disengagement. The Frustration-Aggression Hypothesis (Berkowitz, 1969) may provide a way to understand the lack of findings between anger and moral disengagement. This hypothesis suggests that aggression is due to the experience of frustrations, which are experienced as aversive. This indicates that anger, a potentially aversive state, may generate aggressive tendencies in a perpetrator and serve as an excuse for such behaviors. As such, moral disengagement strategies may not be a prerequisite to engaging in cyber aggression.

Caprara and colleagues (2014) stated that “moral disengagement is the gatekeeper that makes harmful behavior accessible without incurring self-blame and painful emotions” (p. 80). It appears this remains true when examining emerging adults and the perpetration of cyber aggression. Caprara and colleagues (2014) indicated that by late adolescence individuals can evaluate and identify potential aggressive behaviors, leading to the need for cognitive strategies to engage in behaviors that counter one’s personal or perception of societal moral values. This negates the effects of feelings such as guilt and

shame, giving access to such behaviors (Caprara et al., 2014). Specifically, it may be assumed mechanisms of moral disengagement account for the variance in cyber aggression as a result of the characteristics of cyber aggression (e.g., accessibility, anonymity). Future studies would benefit from exploring the components of moral disengagement with regard to cyber aggression, as different mechanisms (e.g., altering the perception of the behavior, personal responsibility, outcome or recipient of the behavior; Paciello et al., 2008) may prove to be stronger predictors than others (e.g., dehumanization). Additionally, examining the studied model separately for men and women would likely benefit the literature base and thus, expand the ability to develop efficient protocols for such behaviors. This is due to prior studies which found varying degrees of the effect of moral disengagement on cyberbullying behaviors between men and women (this relationship was stronger for men; Wang et al., 2016).

Limitations and Future Directions

There are several limitations of the present study that should be considered when interpreting its findings. First, all variables were assessed with self-report measures, raising questions about response biases like social desirability, common-method variance, and the accuracy with which participants remembered their online aggression. Future studies may benefit from including observer ratings, direct examination of online communication via simulated online scenarios, or retroactive examination of online communication where feasible. Second, the cross-sectional design makes it impossible to demonstrate causal relationships between the independent variables and the dependent variable through the mediator. While our findings are consistent with the possibility that elevated sadistic traits lead emerging adults to utilize moral disengagement which

facilitates the perpetration of cyber aggression, causal relationships of that sort would require study designs. Third, while the use of structural equation modeling can be considered a strength in that it can take many variables into account simultaneously while reducing measurement error, it should be noted that it allows variables to deflate the effect of other variables in the model. For example, boredom proneness seemed to obscure the possible contribution of psychopathic traits to some degree. Fourth, White, non-Hispanic, women enrolled in college were overrepresented in the present sample, limiting the generalizability of the results to more diverse populations. While the sample did include participants throughout various regions of the United States, the use of an online system that compensates workers at a lower than minimum wage rate (i.e., Mturk) may lead to specific types of characteristics (e.g., individuals with seemingly advanced technological skills) and motivations related to increasing their compensation. On the other hand, this may also lead to greater access to technology within the present sample and thus, more access to engagement in cyber aggression. Future studies would benefit from gathering more diverse samples and determining whether models vary based on demographic characteristics.

Future Directions

As cyber aggression continues to generate interest in psychology and related fields, several future directions arise. First, it is important to continue expanding our knowledge of cyber aggression through longitudinal and experimental studies to identify and confirm relevant predictors. This would allow us to develop a better understanding of the mechanisms through which they operate with the eventual goal of developing programs to prevent cyber aggression perpetration (Von Marees & Peterman, 2012). As

evidence mounts that cyber aggression (both perpetration and victimization) is associated with increased rates of suicidal ideation (Bonanno & Hymel, 2013; Hinduja & Patchin, 2010; Kowalski et al., 2014; Kowalski & Limber, 2013; Patchin & Hinduja, 2010) to the extent that this consequence has been labeled *cyberbullicide* (Hinduja & Patchin, 2008), efforts to reduce its occurrence and mitigate its impact are pertinent to victims, perpetrators, parents, mental health counselors, researchers, psychologists, school officials, and community health organizations.

Another future direction includes examining differing rates and forms of cyber aggression perpetration among emerging adults enrolled in college versus those not enrolled in college. While the present study indicates found some evidence of increased rates of cyber aggression perpetration among college students, additional data would be helpful to determine what populations should be prioritized in the establishment of cyber aggression policies and prevention. The inclusion of additional variables to provide a more comprehensive picture of cyber aggression perpetration or a more detailed examination of the variables included here may be helpful in better understanding some of the null findings. Empathy is a good example of a variable that may be helpful to examine in future studies, as it relates to other predictors of cyber aggression (i.e., moral disengagement, sadism, psychopathy; Ang & Goh, 2010; Detert et al., 2008; Sest & March, 2017; Mullins-Nelson, Salekin, & Leistico, 2006) but may have greater variability than some of the dark personality traits in non-clinical populations. Examining empathy apart from dark personality traits with which it is known to be correlated may aid in understanding the full range of cyber aggression (e.g., low empathy may be associated with milder forms of cyber aggression perpetration throughout the population

while elevated dark personality traits may be useful for understanding more serious forms of cyber aggression). Similarly, additional work to better understand the possible role of the trait aggressiveness (anger, hostility, physical aggression, and verbal aggression), as well as boredom proneness, would aid in the interpretation of present conclusions and be of use in determining whether these variables should be considered in future studies of cyber aggression perpetration. Some of these variables may have underperformed here because of their relationships with other variables which accounted for more variance in cyber aggression, and so it may be premature to disregard them without additional research. It seems clear that future studies would benefit from assessing cyber aggression perpetration using more comprehensive and psychometrically sound measures. The CESP, utilized in the present study, is one of the few examples appropriate for assessing cyber aggression among emerging adults. Continuing to use this measure should make it easier for researchers to compare findings across studies, and this is likely to advance the literature in meaningful ways.

The results of the present study also support the importance of continuing to examine the role of moral disengagement within cyber aggression. We did not examine specific moral disengagement tactics and doing so may be a valuable next step. Learning more about which aspects of moral disengagement are more strongly associated with cyber aggression perpetration could be helpful in many ways. If, for example, it was found that dehumanization more strongly predicted cyber aggression perpetration than other forms of moral disengagement, this knowledge could benefit the development of intervention and prevention efforts. Techniques aimed at implementing online safety strategies relating to viewing profiles as the individuals behind such profiles might be

emphasized. On the other hand, if diffusion of responsibility was a better predictor, techniques aimed at providing information on cyber aggression rates might be more beneficial.

The results of the present study suggest that moral disengagement is likely to be useful in understanding cyber aggression perpetration, and programs designed to prevent this behavior or intervene with those who engage in it may benefit from considering moral disengagement. The results of Bauman and Baldasare's (2015) qualitative study indicated that college students regarded university involvement in matters related to cyber aggression as beneficial. Specific program and policy recommendations included implementing statements in course syllabi about harmful communication within courses and developing clear university policies highlighting acts that constitute cyber aggression, explaining the consequences for perpetrators, and providing resources for victims. Perhaps these efforts could be supplemented with brief interventions aimed at decreasing moral disengagement since moral reasoning interventions (e.g., peer modeling) have been shown to be beneficial in adolescent samples (Bandura, 1991; Bonanno & Hymel, 2014). Additionally, the present finding that anger and sadistic personality traits predicted cyber aggression perpetration suggests that interventions to improve coping skills (e.g., anger management, distress tolerance, and mindfulness) and address other mental health issues may be useful. Ultimately, the many adverse correlates of cyber aggression and the relatively higher prevalence among college students suggests that universities need effective policies and programming focusing on psychoeducation, raising awareness, and the identification of university (e.g., Title IX officers, new student and retention programs, student and faculty-led organizations, university police) and

community resources (e.g., community mental health and advocacy organizations), as well as support for interventions for perpetrators (e.g., anger management, moral reasoning training, distress tolerance, mindfulness techniques) and victims (e.g., coping skills training, assertiveness training, cognitive reframing techniques).

Overall, the present study extended the literature on cyber aggression in important ways. First, we confirmed the factor structure of the Cyberbullying Experiences Survey in a sample of emerging adults which included both college students and individuals not enrolled in college. Second, we found clear support for the relevance of both sadistic personality traits and trait anger in cyber aggression perpetration. Third, we provided additional evidence for the importance of moral disengagement in cyber aggression by showing that it partially mediated the relationship between sadistic traits and cyber aggression perpetration.

APPENDIX A – Long Form Consent

PROJECT INFORMATION

Project Title: Cyber Aggression and Personality

Principle Investigator: Taylor Bolton (Phone: 334-332-3015; Email: taylor.nocera@usm.edu)

College: Education and Human Sciences

Department: Psychology

RESEARCH DESCRIPTION

1. Purpose

The purpose of this study is to assess how various aspects of personality relate to experiences with cyber aggression (i.e., a form of electronic aggression) among young adults.

2. Description

Participants will be asked to complete online questionnaires about aspects of their personality and forms of cyber aggression in which they have participated or experienced. The study is fully online, will take 20-30 minutes to complete, and is designed to be completed in one session (i.e., starting the study and then trying to finish it later may not work). Participants who complete the study will receive \$0.25 to your MTurk account. Quality assurance checks will be used to make sure that participants are reading each question carefully and answering thoughtfully. Participants who do not pass these checks will NOT receive compensation (\$0.25) for completing the study.

3. Benefits

Participants will earn \$0.25 for completing the study; those who do not complete the study or who fail to pass the quality assurance checks will not receive compensation. Participants will receive no other direct benefits; however, the information provided will enable researchers to better understand the role of personality in experiences with cyber aggression. This study does not involve treatment procedures of any kind or the potential for medical injury.

4. Risks:

There are no foreseeable risks to participating in this study. If you feel that completing these questionnaires has resulted in emotional distress, please stop and notify the researcher (Taylor.Nocera@usm.edu). If you should decide at a later date that you would like to discuss your concerns, please contact the research supervisor, Dr. Eric Dahlen (Eric.Dahlen@usm.edu).

5. Confidentiality

The records obtained from this study will be kept private. After the study is completed, a unique number will be assigned to your information. In any report that might be published using this data, no information will be included that will make it possible to identify any participant. Research records will be stored securely stored and only the researchers involved in this study will have access to the research records.

6. Alternative Procedures

Participation in this study is completely voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Southern Mississippi, the Department of Psychology, Amazon Mechanical Turk. If you decided to

participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Those who elect to not participate in this study, will receive no compensation.

7. Participant's Assurance

This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Manager of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in the Project Information Section above.

CONSENT TO PARTICIPATE IN RESEARCH

Consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. Unless described above and agreed to by the participant, all personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.

Questions concerning the research, at any time during or after the project, should be directed to the Principal Investigator with the contact information provided above. This project and this consent form will be reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS, 39406-0001, (601) 266-5997.

By agreeing to participate in this research,

1. I am confirming that I am 18 years of age or older and am currently living in the United States;
2. I understand I am being asked to complete a set of questionnaires, which will take no more than 30 minutes and for which I will receive \$0.25 as compensation;

3. If I fail to pass quality assurance checks, I will be exited from the study and will not receive compensation, and;

4. All information I provide will be used for research purposes and will be kept confidential.

APPENDIX B – Demographic and Technology Use Questionnaire

For this study, we are trying to collect responses from a wide variety of workers to ensure a representative sample. This requires us to limit the number of workers in certain groups (e.g., age, gender, college status). Please answer the following questions about yourself so we can determine whether you are eligible to participate in this study.

If you are not eligible, you will be redirected to the Mturk website to participate in another study.

What sex were you assigned at birth on your original birth certificate?

- Male
- Female

Do you currently live in the United States?

- Yes
- No

Age (in years):____

Do you use any social media services (e.g., Facebook, Twitter, LinkedIn, Google+, Youtube, Pinterest, Instagram)?

- Yes
- No

Do you use text messaging or any messaging apps (e.g., WhatsApp, Kik, iMessage)?

- Yes
- No

Do you use any messaging apps that automatically delete sent messages (e.g., Snapchat, Wickr)?

- Yes
- No

Do you use email?

- Yes
- No

What is your current gender identity:

- Male
- Female
- Transgender
- Other

Are you of Hispanic or Latino/a origin?

- Yes
- No

Race:

- African American/Black
- Caucasian/White
- Native Hawaiian/Pacific Islander
- American Indian/Alaskan Native
- Asian
- Other

In what region of the United States are you currently living?

- Northeast- New England
- Northeast- Mid Atlantic
- Southwest
- Southeast
- South Atlantic
- Midwest- East North Central
- Midwest- West North Central
- West- Mountain
- West- Pacific

Are you currently enrolled in college?

- Yes
- No

College/University: _____

What type of university do you attend?

- Public/State University
- Private University
- Liberal Arts College
- Religious Affiliated School

Please estimate the size of your school:

- Less than 2000 students
- 2000 to 5000 students
- 5000 to 10000 students
- 10000 to 15000 students
- 15000 to 20000 students
- 20000 to 30000 students
- More than 30000 students

College Status:
 Freshman
 Sophomore
 Junior
 Senior
 Graduate or other

Are you a member of a sorority or fraternity?
 Yes
 No

Do you live on campus or off campus?
 On campus
 Off campus

Where do you primarily live while going to school?
 Dorm
 Apartment- on campus
 Apartment- off campus
 Fraternity/Sorority House
 With Parents

Please select the number closest to your current cumulative GPA: ____

Please indicate how often you use each of the following social networking sites.

Facebook: Several times a day Daily Weekly Less than weekly Never
Twitter: Several times a day Daily Weekly Less than weekly Never
LinkedIn: Several times a day Daily Weekly Less than weekly Never
Pinterest: Several times a day Daily Weekly Less than weekly Never
Google Plus: Several times a day Daily Weekly Less than weekly Never
Tumblr: Several times a day Daily Weekly Less than weekly Never
Instagram: Several times a day Daily Weekly Less than weekly Never
Snapchat: Several times a day Daily Weekly Less than weekly Never
Reddit: Several times a day Daily Weekly Less than weekly Never

Please slide the bar to indicate how often you use the specific technology.

How much time do you spend using any social media apps on a typical day?
 None 30 Minutes 1 Hour 3 Hours 6 Hours 8 Hours 12 Hours All day

How much time do you spend text messaging on a typical day?
 None 30 Minutes 1 Hour 3 Hours 6 Hours 8 Hours 12 Hours All day

How much time do you spend emailing on a typical day?

None 30 Minutes 1 Hour 3 Hours 6 Hours 8 Hours 12 Hours All day

APPENDIX C – IRB Approval Letter



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INSTITUTIONAL REVIEW BOARD

[118 College Drive #5147 | Hattiesburg, MS 39406-0001](#)

Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional-review-board

NOTICE OF COMMITTEE ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately, but not later than 10 days following the event. Problems should be reported to ORI via the Incident template on Cayuse IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: IRB-18-104

PROJECT TITLE: Personality and Electronic Communication Among Emerging Adults

SCHOOL/PROGRAM: School of Psychology, Psychology

RESEARCHER(S): Taylor Bolton
Eric Dahlen

IRB COMMITTEE ACTION: Approved

CATEGORY: Expedited

PERIOD OF APPROVAL: November 26, 2018 to November 26, 2019

Edward L. Goshorn | Ph.D.
Institutional Review Board Chairperson

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