

EXPLOITATION, DARK TRAITS, & COERCION PERCEPTIONS

**The Dark Side of Being Connected:  
Image-Based Sexual Exploitation, Dark Personality Traits, and Coercion Perceptions**

By

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### **Abstract**

Technology use has brought about the perpetration of both sexting coercion and image-based sexual abuse (which includes sharing or threat of sharing someone's intimate image). This study sought to examine the association between the Dark Tetrad, propensity to morally disengage, and the perpetration of sexting coercion and image-based sexual abuse. As well, this study then examined how those variables influence how someone perceives online coercion, when relationship type and coercion tactic are altered. With a sample of 1467 university students (72% women; 74% heterosexual), higher psychopathy, sadism, or narcissism scores was associated with an increased likelihood of perpetrating image-based sexual abuse. For sexting coercion, identifying as a man, and higher narcissism scores were associated with an increased likelihood of perpetrating sexting coercion. Scoring higher in psychopathy, sadism, and narcissism were predictive of having a higher propensity to morally disengage. Examining coerciveness perceptions from the vignettes, being a woman and not having perpetrated sexting coercion were predictive of rating the vignettes more coercive and being higher in moral disengagement propensity was predictive of rating the vignettes less coercive. There was no interaction between relationship type and coercion tactic and no main effect for relationship type but was a main effect for coercion tactic. The threaten tactic was associated with a mean "Coercion" score 7.71 points higher than the hinting tactic. This study has implications regarding who may be more likely to perpetrate image-based sexual abuse or sexting coercion and what factors may influence perceptions of online coercion. This study also showed that the general aggression model appears to be a valid theory to explain image-based sexual abuse and sexting coercion perpetration.

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## **The Dark Side of Being Connected:**

### **Image-Based Sexual Exploitation, Dark Personality Traits, and Coercion Perceptions**

There have been many technological advancements since the creation of the World Wide Web in the 1980's (*History of the Web*, n.d.). Internet is faster and spread across more parts of the world, allowing people to communicate. As well, cell phones are smaller, more compact, and can access applications and the Web. Eighty-five percent of people aged 18 to 29 are using their cell phones to access the internet (Duggan & Smith, 2013). This global connection has brought about the rise of internet communication, online dating, and online sexual activity (e.g., Hobbs et al., 2017; Mori et al., 2020; Rosenfeld & Thomas, 2012). Around 50% of people on dating applications are under 30 years old, with some reports being higher depending on the platform (e.g., Iqbal, 2020; Vogels, 2020). Individuals between the ages of 18 and 29 are also ones most frequently sending and receiving sexual images or videos electronically (Mori et al., 2020), and with Covid-19 pandemic, a general increase in sending naked images has been reported (Iovine, 2020; White, 2020). Those in long distance relationships are also engaging in more cybersex as a way to stay intimate, with sexual messages or images being the preferred forms of communication (Bonilla et al., 2020; Nordqvist & Exner, 2020), and those in both casual or dating relationships often view sexting as a way to flirt or as foreplay (Burkett, 2015; Roberts & Ravn, 2019). Unfortunately, there have been negative side effects and consequences of this increased internet use, such as sexual violence happening over the internet and cyberspace, and the sharing of intimate photos without another's consent (e.g., Clancy et al., 2019; Henry et al., 2018).

The Covid-19 pandemic brought a lot of face-to-face interaction to a halt, but fortunately with technology, people have been able to stay connected. Unfortunately, there has been an

increase in things such as image-based sexual abuse because of it (Powell & Flynn, 2020), which is already often unreported by victim/survivors (McGlynn & Rackley, 2017; Wolak et al., 2018) and has low numbers of police persecutions against perpetrators (McGlynn & Rackley, 2016). This can have negative consequences and long-term impacts on the victim/survivors (Flynn et al., 2016; McGlynn & Rackley, 2016; Wolak & Finkelhor, 2016). The pandemic has highlighted a problem that researchers have been examining: the use of coercive tactics to get someone to send naked images or videos.

The purpose of this study was to: 1) examine the association between the dark personality traits (psychopathy, narcissism, sadism, Machiavellianism), moral disengagement, and past perpetration of image-based sexual abuse and sexting coercion; 2) explore how dark personality traits and past perpetration of image-based sexual abuse and sexting coercion influence how online coercion is perceived; and 3) investigate how the relationship status of individuals and coercive tactic used may change how online coercion is perceived.

### **Technology-Facilitated Sexual Violence and Image-Based Sexual Exploitation**

Sending sexual texts, images, and/or videos electronically, also known as “sexting,” (Clancy et al., 2019; Klettke et al., 2019) is often a consensual activity. Among adolescents and young adults, research has found that sexting is quite common (Clancy et al., 2019; Gordon-Messer et al., 2013; Mitchell et al., 2012; see Mori et al., 2020 for a meta-analysis). A review by Klettke et al. (2014) indicated that around 50% of young adults had sent and/or received a sext, and a study by Reed and colleagues (2020) found that rates of receiving a sexual image in teens were 36% (young women) and 44% (young men), with more young women sending sexts than young men (21% versus 15%, respectively). When specifically in a dating relationship, the percentages of receiving a sexual image increased to 45% (young women) and 52% (young

men), with young women again sending an image more often than young men (28% versus 20%, respectively; Reed et al., 2020). In contrast, when examining the frequency of sending or receiving consensual sexts in undergraduate students, Cornelius et al. (2020) did not find a gender difference. Thomas (2018) noted that while sending sexts could be fun and wanted, with both relationship partners or strangers, some teen girls felt afraid or that sending these sexts were required. It is when this consensual behaviour becomes non-consensual or coercive that it becomes a problem.

Technology-facilitated sexual violence is a broad term used to encompass “a range of criminal, civil, or otherwise harmful sexually aggressive and harassing behaviors that are perpetrated with the aid or use of communication technologies” (Henry & Powell, 2018, p. 195-196). Of the five dimensions outlined by Henry and Powell (2018) in their review of technology-facilitated sexual violence, this study only focused on the sexual exploitation of images. This includes revenge pornography and sexting coercion (Henry & Powell, 2018). I used the broader definition of revenge pornography, image-based sexual abuse (see McGlynn & Rackley, 2017; Powell et al., 2019), since revenge pornography implies the perpetrator is motivated by revenge, or that the perpetrator/victim is an ex-partner, which is not always the case (e.g., Karasavva & Forth, 2021; McGlynn & Rackley, 2017). “Image-based sexual abuse involves three key behaviors: the non-consensual taking or creation of nude or sexual images; the non-consensual sharing or distribution of nude or sexual images; and threats made to distribute nude or sexual images” (Powell et al., 2019, p. 393). There is some variation about what image-based sexual abuse encompasses. Contrastingly, while Henry and Powell (2018) label sextortion (i.e., a form of sexual coercion or extortion where the perpetrator holds sexual images against the victim; McGlynn et al., 2017; Wittes et al., 2016; Wolak & Finkelhor, 2016) as a separate dimension

from image-based sexual abuse, McGlynn et al. (2017) argue that it falls within it, due to “the overlapping nature of various forms of abuse, including modes and motives of perpetration, and effects on victim-survivors” (McGlynn et al., 2017, p. 28). For this study, any mentions of sextortion will be within the image-based sexual abuse category, specifically regarding instances of threatening to expose intimate images of a victim until they cooperate (Henry & Powell, 2018; Wolak & Finkelhor, 2016), which is often for the goal of receiving more intimate images or more explicit sexual content (Humelnicu, 2017; Wittes et al., 2016). Sexting coercion has not always been explicitly defined in the literature. One definition was constrained to threats or continuing to ask for images or video (Gassó et al., 2021), other definitions are broader and include various acts of coercion to convince someone to send a sexual image or text (e.g., withholding resources, hinting at leaving a relationship; Drouin et al., 2015; Ross et al., 2019). I used the broader understanding of sexting coercion, since this behaviour can include more subtle manipulations, such as hinting (e.g., Cornelius et al., 2020, adapted from Goetz & Shackelford, 2010) or persisting to ask until the victim gives in (e.g., Reed et al., 2020), but can also include threats of physical force or physically forcing a person (Drouin et al., 2015, adapted from Goetz & Shackelford, 2010). Unfortunately, people in the world are engaging in these behaviours or being victimized by them.

### **Perpetration and Victimization**

While this study examined perpetration, more studies have been conducted on victimization than perpetration, and often have higher self-report rates, so I have reviewed the relevant literature on victimization. Individuals between the ages of 18 and 24 have been reported to have the highest lifetime technology-facilitated victimization rates, with men often the perpetrators of technology-facilitated sexual violence (e.g., Powell & Henry, 2019). This is

similar to in-person sexual aggression and coercion rates, where men are also more likely to be the perpetrators (e.g., Muñoz-Rivas, 2009; Struckman-Johnson et al., 2003). Sexual aggression has been found to be positively correlated with likelihood of future technology-facilitated sexual violence perpetration in both men and women (Zhong et al., 2020). When looking at image-based sexual abuse, Henry et al. (2018) found that while men were more likely to be perpetrators, both men and women are likely to report being a victim. Powell et al. (2019) and Karasavva (2020) noted similar findings with men and women equally likely to be targeted. When specifically examining sharing images without consent, Wachs et al. (2021) found that teenage boys were more likely to disseminate a sext than teenage girls. For threats to disseminate an image, Patchin and Hinduji (2020) reported higher victimization rates for male participants and higher perpetration rates. When specifically examining sexual orientation, studies have found that non-heterosexual individuals were more likely to experience image-based sexual abuse victimization than heterosexual individuals (Karasavva, 2020; Powell et al., 2020). For individuals using dating applications, Waldman (2019) found that “gay and bisexual men . . . are more frequently victims of revenge porn than both the general population and the broader lesbian, gay, and bisexual community” (p. 987). In their study with adolescents aged 12 to 18, Gámez-Guadix and Incera (2021) found a non-significant difference of revenge porn victimization but a significant difference for sextortion victimization with non-heterosexual participants being victimized at higher rates as compared to heterosexual participants (9% versus 3.4%, respectively). This highlights how pervasive the problem of image-based sexual abuse is. As well, individuals between 16 to 29 were more likely to experience image-based sexual abuse than other age ranges (Henry et al., 2018; Powell et al., 2020). For image-based sexual abuse victimization, various studies have found rates around 20% to 33% (Karasavva, 2020; Powell et

al., 2020), and perpetration rates ranging from approximately 10% to 20% (Clancy et al., 2019; Karasavva, 2020; Powell et al., 2019, 2020). Within this, Powell et al. (2019) found similar rates of both image-based sexual abuse distribution and image-based sexual abuse threat of distribution in a community sample while Karasavva (2020) reported higher rates of image-based sexual abuse distribution for both perpetration and victimization with an undergraduate sample. More research should examine the rates of both the threat of distribution and distribution itself within image-based sexual abuse.

For sexting coercion, rates of perpetration have been around 6% to 8% in adolescents and university samples (Gassó et al., 2021; Kernsmith et al., 2018), while victimization rates have been reported to be between 12% in adolescent samples (Kernsmith et al., 2018) and between 20% and 42% in undergraduate samples (Cornelius et al., 2020; Drouin et al., 2015; Gassó et al., 2021; Kernsmith et al., 2018; Ross et al., 2019). Cornelius et al. (2020) noted that:

Nearly 28% of the sample said they felt at least a little coerced about sending the first sext in their most recent consensual sexting relationship, with 41.8% of participants stating that they felt some pressure to send the first sext. Beyond the first sext, 22% of the sample said that they felt pressured or coerced to send sexts on other occasions. (p. 8).

When examining age ranges, those between 16 to 29 reported experiencing more pressure to sext as compared to other age ranges (Henry et al., 2019). Findings on the gender of perpetrators and victims are mixed. Gassó et al. (2021) found that university men were more likely to use pressure to receive sexts, while the use of threats did not differ between men and women. For victimization, women were more likely to have experienced pressure or threats compared to men (Gassó et al., 2021). Drouin and colleagues (2015) examined this using undergraduate students and found that around 20% of their 480 participants had sent a private

image when they did not want to and had been coerced, and these rates were similar for both men and women. Henry et al. (2019) and Cornelius et al. (2020) also found a non-significant effect of gender for pressured sexting. This conflicts with other studies where more female participants reported being coerced to sext than the male participants (Englander 2012; Kernsmith et al., 2018; Ross et al., 2019; Wachs et al., 2021; S. Walker et al., 2013). Reed et al. (2020) found that for motivations to send an image, girls were more than twice as likely to report some form of pressure than boys. Female and transgender participants have also been reported to experience the highest perpetration and victimization rates of online dating abuse, which includes coercion/pressure (Dank et al., 2014). The mixed findings indicates that more research should be done to clarify the gender differences. When examining sexual orientation, those in sexual minorities have been found to have higher online abuse victimization rates than heterosexual participants (Dank et al., 2014). Interestingly, Dank and colleagues (2014) found that non-heterosexual participants also reported higher online abuse perpetration rates than heterosexual participants.

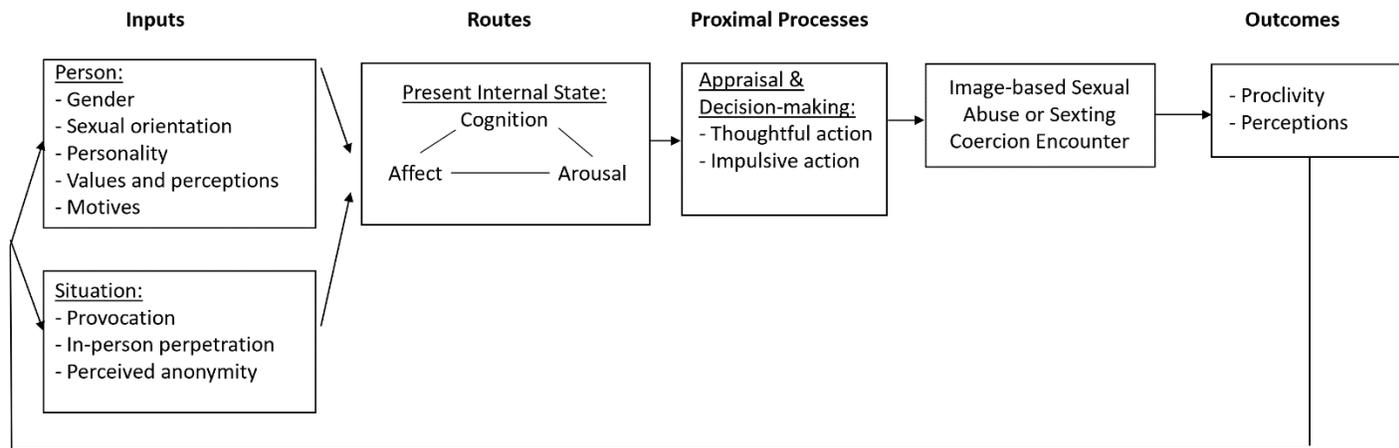
## **Theories to Explain Online Exploitation**

### ***General Aggression Model***

The framework of the general aggression model combines other theories of aggression into one (Anderson & Bushman, 2002) and includes individual and situational factors, internal states, proximal processes, and outcomes (Anderson & Bushman, 2002; Kowalski et al., 2014; Savage & Tokunaga, 2017). The model has been modified to explain cyberbullying perpetration, with the cyberbullying encounter being added to the model (for a diagram, see Kowalski et al., 2014). Below (see Figure 1) is a conceptualization of how the modified general aggression model could be applied to image-based sexual abuse and sexting coercion.

**Figure 1**

*Image-Based Sexual Abuse and Sexting Coercion Perpetration Through the General Aggression Model (adapted from Kowalski et al., 2014)*



The general aggression model may be applied to the perpetration of image-based sexual abuse and sexting coercion. Gender, sexual orientation, personality, values/perceptions, and motives may all have an influence as person-specific factors. For gender, research has found that for image-based sexual abuse, men are more likely to perpetrate, while both men and women are likely to be victimized (Henry et al., 2018; Karasavva, 2020; Powell et al., 2019), whereas with sexting coercion, the findings are mixed. For sexual orientation and both image-based sexual abuse and sexting coercion, individuals identifying as non-heterosexual have often been found to have higher victimization rates (Dank et al., 2014; Gámez-Guadix & Incera, 2021; Karasavva, 2020; Patchin & Hinduja, 2020; Powell et al., 2020; Waldman, 2019). With the dark personality traits, scoring higher in psychopathy and narcissism have been linked with overall image-based sexual abuse perpetration (Karasavva, 2020), sadism, Machiavellianism, and narcissism with image-based sexual abuse distribution (Clancy et al., 2019, 2020; Karasavva & Forth, 2021). To the best of my knowledge, there are no studies examining sexting coercion and actual perpetration or victimization with the dark personality traits. Under values and perceptions,

moral disengagement may influence someone's perception, thereby altering their likelihood of perpetration of image-based sexual abuse or sexting coercion (see below for an overview of moral disengagement). As coined by the term "revenge pornography", one motive for the perpetration of image-based sexual abuse is revenge over an ex-partner who may have hurt them (Hall & Hearn, 2019). For sextortion, the perpetrator often wants more sexual images or content from their victims (Humelnicu, 2017; Wittes et al., 2016).

Situation-specific factors include provocation, which can influence perpetration. Karasavva (2020) and Powell et al. (2019) found a relationship between perpetration and victimization of image-based sexual abuse (this may also tie into an impulsive action, whereby the victim becomes the perpetrator). Kowalski et al. (2014) include in their model when a victim may become the perpetrator: at the decision-making stage. As well, Kernsmith et al. (2018) found that perpetrating in-person sexual coercion was related to perpetrating online sexual coercion. Secondly, being online may increase perceived anonymity (e.g., Kowalski et al., 2014), and there have been cases where the perpetrator or victim of image-based sexual abuse does not even know the gender of the other individual (e.g., Karasavva, 2020).

Routes include an individuals' cognition, affect, and arousal and the interactions between them all (Anderson & Bushman, 2002). Examples can include scripts that people hold, or even someone's mood (Anderson & Bushman, 2002). Proximal processes include whether, based on their internal state, they react or think about potential behaviour before it occurs. An individual will appraise the situation and either engage in an impulsive or thoughtful action:

Immediate appraisal is automatic, i.e., relatively effortless, spontaneous, and occurring without awareness. Depending on the circumstances, immediate appraisal may produce either an automatic trait or situational inference. ... What happens after immediate

appraisal depends on other resources. If the person has sufficient resources (time, cognitive capacity) and if the immediate appraisal outcome is both important and unsatisfying, then the person will engage a more effortful set of reappraisals. Otherwise, impulsive action results, action that may be aggressive or nonaggressive depending on the content of the immediate appraisal. Reappraisal involves searching for an alternative view of the situation. ... If reappraisal leads the person to believe that the [other individual was intentionally harmful], the person may well respond with a thoughtful aggressive action, which may be coldly calculating or may still have hot affective characteristics. (Anderson & Bushman, 2002, p. 41).

Regarding outcomes, perpetrating these behaviours may result in an increase in proclivity, especially in conjunction with factors such as the dark personality traits (see Pina et al., 2017 for revenge porn proclivity and the dark personality traits). Engaging in, or being victim to, image-based sexual abuse and sexting coercion may result in a change of perception in what is acceptable behaviour as well, which is possibly shown by the relationship between perpetration and victimization mentioned above.

The general aggression model has been adapted to explain cyberbullying. As stated in a review by Ansary (2020), there has not been a consensus in the literature about a theoretical model to explain cyberbullying, partially due to the division over the definition of cyberbullying. It makes sense then that, with no agreement over what behaviours count as cyberbullying, there is no one theoretical framework. Ansary (2020) does note that person-specific factors (e.g., personality, moral disengagement, etc.) are relevant for a complete model and, as stated above, moral disengagement is one factor that appears to be significant when explaining cyberbullying.

Overall, the general aggression model has been used to explain the perpetration of cyberbullying, with moral disengagement being a recurring factor in the literature. This general aggression model, with the inclusion of moral disengagement, has merit for explaining image-based sexual abuse and sexting coercion perpetration.

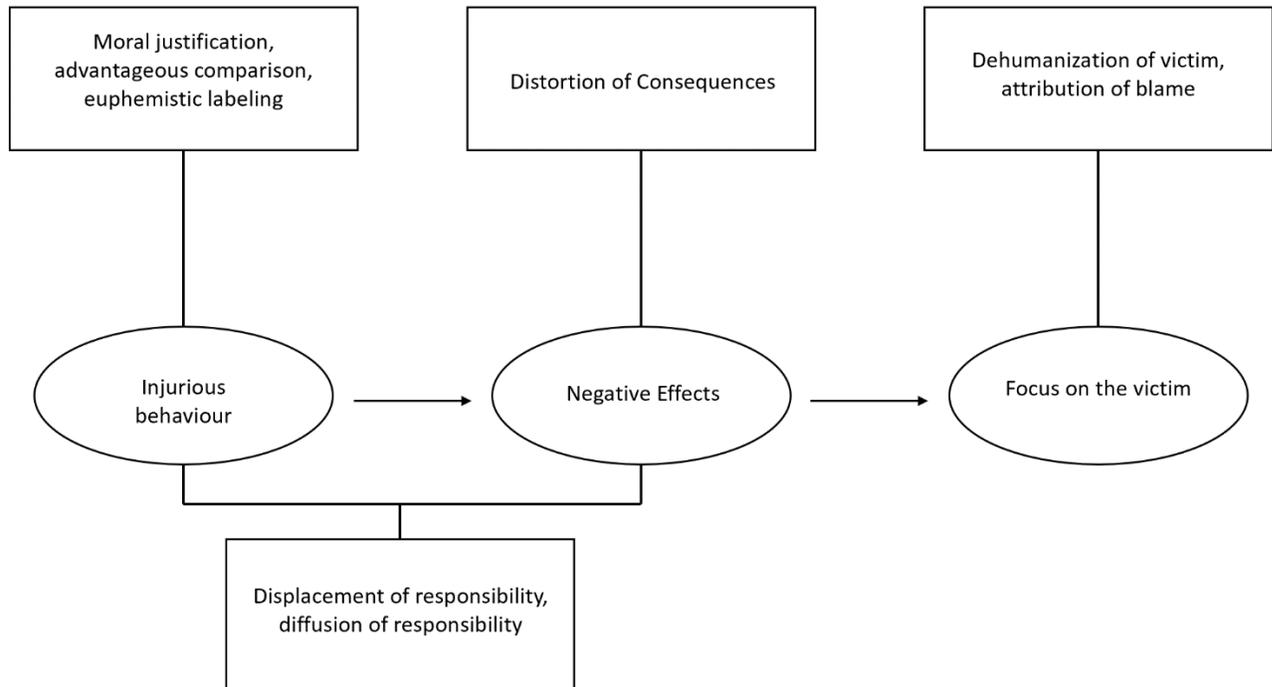
### ***Moral Disengagement***

Part of social cognitive theory, moral disengagement is the way in which individuals can reframe their harmful actions in a way that does not go against their morals, or distances themselves from them, allowing people to engage in those behaviours (Bandura, 1990; Bandura et al., 1996). It consists of eight mechanisms that individuals may engage in (Page & Pina, 2015). See Table 1 for the list and their descriptions, and Figure 2 for the pathways of it.

**Table 1**

#### *Moral Disengagement Mechanisms*

<b>Mechanism</b>	<b>Description</b>
Moral Justification	Reframing the behaviour to appear morally acceptable
Euphemistic Labelling	Making the behaviour seem less harmful by the language used
Advantageous Comparison	When an individual compares their behaviour to something perceived as more extreme or harmful
Displacement of Responsibility	The behaviour was caused by pressure from others or an authority
Diffusion of Responsibility	Putting the responsibility for the behaviour on others in a group environment
Distortion of Consequences	Minimizing or avoiding the impacts that the behaviour had on someone
Dehumanization	Victims are perceived as being less than human
Attribution of Blame	Putting the blame on the victim

**Figure 2***Pathways of Moral Disengagement (adapted from Bandura, 1986)*

Moral disengagement may be an appropriate framework or construct to help explain the perpetration of image-based sexual abuse and sexting coercion. Individuals may compare their actions to face-to-face abuse or coercion and perceive the online behaviour as less serious (Karasavva, 2020). This would fall under the tactic in moral disengagement of advantageous comparison, when an individual compares their behaviour to something perceived to be more extreme or harmful (Page & Pina, 2015). Some police officers believe that when harassment happens virtually, it is less serious than when it happens face-to-face (Holt & Bossler, 2012). Next, Bandura et al. (1996) wrote that some ways that people do not let their self-sanctions stop them is by “disregarding or distorting the consequences of action” (p. 365) or by changing the language used. Individuals engaging in image-based sexual abuse and sexting coercion could employ these tactics as a way to get what they want from their victim. In order to get what they

want, they may minimize the harm of their behaviour. Studies have found that the harms of image-based sexual abuse perpetration have been downplayed, and the act of disseminating seen as funny or a joke (Clancy et al., 2019, 2020, 2021; Naezer & van Oosterhout, 2021). Karasavva and colleagues (2022) found that the Minimize/Excuse subscale of the Sexual Image-based Abuse Myth Acceptance (SIAMA; Powell et al., 2019) scale was the only significant predictor of non-consensual sexual image sharing proclivity (the model included gender, sexual orientation, the dark personality traits and the SIAMA total and subscales). Lastly, studies have found cases of victim-blaming when it comes to image-based sexual abuse. Seventy-three percent of a university sample were not completely against victim blaming when shown various vignettes involving non-consensual sexual image sharing (Karasavva et al., 2022). Henry et al. (2018) reported that over 50% of their sample believed that the victim was partially responsible if their sexual image is disseminated online, and that people should be smart enough not to take sexual images of themselves. This mirrors Naezer and van Oosterhout (2021), who had one participant report that a teacher blamed the victim: *“You shouldn’t have made those nude pictures, that’s just stupid. You can expect this [non-consensual sharing] to happen”* (p. 86). As well, women are often the targets of victim blaming more so than men (Bothamley & Tully, 2017; Henry et al., 2018).

Engaging in image-based sexual abuse or sexting coercion may be made easier by the fact that it can take place virtually. As research has suggested, when perpetrators do not see the harm they have caused, it is easier to engage in behaviours that normally go against someone’s morals (Bandura, 2002; Runions & Bak, 2015). Interestingly, correlations between moral disengagement and cyberbullying have been found (see Kowalski et al., 2014 for a meta-analysis), and moral disengagement and cyberaggression (Meter et al., 2021; Robson &

Witenberg, 2013) which suggests that online spaces create the perfect environment for individuals to perpetrate harassment and violence online. There are very few applications of moral disengagement to both face-to-face and online sexual aggression and violence (e.g., Page et al., 2016), but this theory has merit for explaining the perpetration of sexual aggression and violence (Page & Pina, 2015).

Schaefer and Bouwmeester (2020) bring up the important distinction of moral disengagement as a process versus a trait. They explain how the literature has often mixed them up, with some measures examining moral disengagement as a trait and some as a process (process being aligned with Bandura's original idea; Schaefer & Bouwmeester, 2020). While directly relating moral disengagement to image-based sexual abuse and sexting coercion could be examined as a process (for an example, see Karasavva, 2020), this study explored moral disengagement as a trait, as measured by Moore and colleagues (2012) Propensity to Morally Disengage Scale. This fits within the general aggression model with moral disengagement acting as an individual value or perception.

From the suggested general aggression model shown above, this study examined gender, sexual orientation, the dark personality traits (under personality traits), moral disengagement (under values/perceptions), past perpetration, and then how all these influence perceptions of other online sexual coercion events (i.e., my vignettes, which vary by coercion tactic and relationship type).

### **Coercive Tactics**

People use different types of coercion to get someone to comply with what they want. There are more subtle forms of coercion (e.g., persisting in asking) and more severe tactics (e.g., physical force or threats of force; Drouin et al., 2015; Reed et al., 2020; Van Ouytsel et al., 2017;

S. Walker et al., 2013). Of the undergraduates sampled, 70% had been coerced into sexting, with subtler coercion tactics being used more often (Englander, 2015). S. Walker et al. (2013) noted that feeling like they had been threatened and bribed were tactics often reported by their female participants to get them to send an intimate image, with that image then being held against them once sent. Thompson and Morrison (2013) examined a male university sample and found that approximately 16% had sent some intimate content to a further individual (a form of image-based sexual abuse). Once an intimate image is sent, perpetrators may use them to blackmail the individual into doing what they want, such as other sexual behaviours, and threaten to disseminate the image otherwise (Van Ouytsel et al., 2017). Drouin and colleagues (2015) examined the usage of various online coercive acts in a university sample and found that the reported tactics of online sexual coercion varied by severity, with more participants reporting more subtle forms. For example, “Partner made me feel obligated” (10%); “Partner persisted in asking. . . even though s/he knew that I did not want to” (12%); threats of physical force (2%); physical force (2%; Drouin et al., 2015, p. 201). One coercive tactic that has been reported in research that is sometimes used in relationships is telling the partner that they would send a sexual image if they loved them (Thomas, 2018). This hints that perpetrators may use emotional manipulation to get the victim to comply. Goetz and Shackelford’s (2010) Sexual Coercion in Intimate Relationships Scale has been adapted in studies to assess sexting coercion in relationships (e.g., Cornelius et al., 2020; Drouin et al., 2015; Ross et al., 2019). This scale includes various tactics of ranging severity that individuals may use, including factors such as emotional manipulation, various threat tactics, and physical force (Goetz & Shackelford, 2010). Items measured on this scale match tactics reported in other studies (e.g., Van Ouytsel et al., 2017 such as reported emotional pressure to sext). Using an adapted version of the Sexual

Coercion in Intimate Relationships Scale, Drouin and colleagues' (2015) reported that commitment manipulation was the most often used tactic for the sample overall, and that while this was the highest tactic for women as well, the highest tactic for men was resource manipulation. As well, escalation of tactics has been reported to occur if the victim did not send the sexual content that the perpetrator wanted (e.g., repeatedly asking escalating to threatening to release an image previously sent; Thomas, 2018).

Kernsmith and colleagues (2018) found a link between in-person sexual coercion and sexting among adolescents. Those who had perpetrated *sexting* coercion had a higher likelihood of using *sexual* coercion to have sexual intercourse, and those who had been victims of sexting coercion had a higher likelihood of being a victim of sexual coercion to have sexual intercourse (Kernsmith et al., 2018). These associations that have been found between in-person sexual coercion and sending and receiving sexts may indicate “that sexting could function as an online extension of offline forms of sexual coercion” (Choi et al., 2016, p. 164). While this study does not focus on in-person sexual coercion alongside online sexual coercion, future studies should examine this link.

### **Relationship Type**

The type of relationship that individuals are in (e.g., acquaintances, committed relationship, etc.) can influence the amount of consensual and coerced sexting and image-based sexual abuse. Studies have found that while consensual sexting happens frequently within committed relationships (Drouin et al., 2013, 2017), coerced sexting can still happen within these relationships (Van Ouytsel et al., 2017). Cornelius and colleagues (2020) examined sexting in a university sample and reported that more sexts were sent to casual partners (52%) than committed partners (48%). Men and women have been found to differ in terms of most frequent

consensual sexting partners, with men sexting more casual partners and women sexting more committed partners (Drouin et al., 2017). For sexting online individuals or new people, men have also been found to engage in this behaviour more often than women (Henry et al., 2019). As well, Englander (2012) found that participants who felt forced to sext reported that it was their “date” or friend who wanted to sext. And when examined, 70% of teens had felt pressured for a sexual image at some point in high school, whether in a relationship with the individual or not (Englander, 2015). Gassó et al. (2021) examined perpetration by gender and found that while women tended to coerce their partners, men tended to coerce a friend. Typically, studies have indicated that women are more often the ones experiencing image-based sexual abuse and pressure, and most frequently from their dating partner (Henry et al., 2018, 2019; Reed et al., 2016). K. Walker and colleagues (2019) noted higher rates of sending or receiving sexts for those in current dating relationships, past dating relationships, and past or future hookups, as compared to those who just met or were friends, so studying these groups are important. Drouin and colleagues (2013) found that “those in casual sex relationships were five times as likely. . . as those in committed relationships to forward the pictures their partners sent them”, which is a form of image-based sexual abuse (p. 29). Henry and colleagues (2018) found that for most of the image-based sexual abuse reported in their study, the abuse happened from someone the participants knew (i.e., acquaintances, friends, family, partner, or ex-partner); only 6% to 9% of the abuse was from strangers (varied by gender). When examining the subtypes of abuse (i.e., taken, threatened, distributed), 38% of female participants were threatened by a current or ex-partner, versus 23% of the male participants (Henry et al., 2018). Powell et al. (2019) and Karasavva (2020) noted similar findings, with participants reporting their victim as being someone they knew (e.g., committed partner, ex-partner, friend) more often than a stranger. It

may be the case that girls and women are expected or pressured to send sexually suggestive images and videos when flirting or when in intimate relationships compared to boys and men (Clancy et al., 2019). More research is needed with young adults to assess how relationship type influences how often coercion or image-based sexual abuse are used to obtain sexual images.

### **Impact on Victim/Survivors**

Knowing what might influence image-based sexual abuse and sexting coercion perpetration is important because of the negative effects this behaviour can have on those who have experienced by it. In a study by Thomas (2018), just over half of the girls and young women either gave in to the coercion or refused and often faced consequences for doing so (e.g., having their relationship ended). Overall, the emotional and psychological impacts of victimization may include feeling unsafe, distressed, lower self-esteem, engaging in self-blame, and becoming withdrawn or depressed (e.g., Bates, 2017; Flynn et al., 2015, as cited in Flynn et al., 2016; Flynn et al., 2016; Klettke et al., 2019; Wachs et al., 2021; Wolak & Finkelhor, 2016). McGlynn and Rackley (2016) note that some victimized individuals may end up with their jobs at risk because of the possibility of their employers finding the images online if distributed, while others may be declined for potential jobs. When asked about how they felt when it happened versus looking back on being coerced to sext, women have reported feeling more harmed when remembering the experience, possibly due to the uncertainty of whether it will end up online or disseminated to others (Drouin et al., 2015). Some victim/survivors even attempt to, or do, end their own lives (Humelnicu, 2017; McGlynn & Rackley, 2016).

Karasavva (2020) and Powell et al. (2019) reported that both male and female participants who had experienced image-based sexual abuse victimization were more likely to report perpetrating image-based sexual abuse themselves, and vice versa. Patchin and Hinduji

(2020) found the same results with teenagers and sextortion perpetration and victimization.

These findings combined with the negative effects of victimization highlight how important it is to learn more about this online coercion and abuse.

### **Coercion Perceptions – In-person and Online**

For perceptions around in-person coercion, past studies have found that the type of relationship individuals are in changes how consent and coercion are perceived. Continuous consent is often assumed in dating relationships, with the opposite being true for those not in a dating relationship, where non-consent is assumed (Muehlenhard et al., 2016). Examining coercion, Freetly and Kane (1995) had college students read scenarios where force was kept ambiguous to have sexual intercourse, and varied the relationship levels (e.g., acquaintances, dating, married). Their results indicated that overall, acceptability of the behaviour increased as the relationship status increased, with more male students finding the tactics acceptable than the female students (Freetly & Kane, 1995). Arriaga et al. (2016) also found that coercion was tolerated in more committed relationships, including longitudinally. As well, various forms of coercion have been more accepted in face-to-face committed relationships. College students who believed that coercing their romantic partner was okay, were more accepting of using verbal coercion (e.g., hinting, threatening, flattering) to get their partner to engage in sexual behaviours (Eaton & Matamala, 2014). Goetz and Shackelford (2010) speculate why non-violent tactics may be used. They indicated that because relationship partners are interested in and have put in time and effort into making the relationship work, they may use more subtle coercion tactics to get what they want, instead of more forceful ones (Goetz & Shackelford, 2010). This has even been demonstrated for sexting coercion (e.g., Drouin et al., 2015). Verbal coercion being perceived as more acceptable, especially when used in intimate relationships, may influence how coercion in

online situations is perceived, especially since most communication online is through an application or device. Some researchers have separated types of verbal coercion due to the differing severity of the behaviour (e.g., persistently asking, threats, criticism; Camilleri et al., 2009; Koss et al., 2007; Livingston et al., 2004). Often, the softer the coercion tactic, both verbal and physical, the more acceptable it is perceived in intimate relationships (Camilleri et al., 2009). Camilleri et al. (2009) separated coercion and coaxing, with coaxing being “a strategy that uses benign, seductive tactics to obtain sex from a reluctant sexual partner” (p. 960), such as massaging or jokes. In their factor analysis, persistently asking did not always load onto the Coercion subscale and was removed but talking about ‘needs to be met’ and making them feel bad, loaded onto Coercion (Camilleri et al., 2009). Conversely, Goetz and Shackelford’s (2010) Sexual Coercion in Intimate Relationships Scale includes persisting to ask and hinting in their measure, and it has been kept in the adapted sexting coercions. Qualitative studies, as well, have classified ‘consistently asking’ as coercion (Reed et al., 2020). There is still a gap in the research about whether any of the coercive tactics used in sexting coercion to obtain sexual images or videos are viewed as more “appropriate” or “acceptable” than others (e.g., subtle versus more severe), or what specific acts victim-survivors count as coercive.

Coercion does not just happen in person; it happens online too. The problem is that people may not think that perpetrating image-based sexual abuse or sexting coercion is serious (e.g., Clancy et al., 2019). When looking at perceptions of online harassment, Holt and Bossler (2012) found that only 19% of police officers reported that they believed online harassment was very serious. That is not the only report of law enforcement or court officials minimizing the harm of online harassment (for an example, see Powell & Henry, 2018). Some officers may even shame the victims for sending the images in the first place (Wolak & Finkelhor, 2016), or

attribute different levels of blame based on whether the victim/survivor took the image themselves (Zvi & Shechory Bitton, 2020). Henry and colleagues (2019) surveyed men and women and found that men downplayed the harm of image-based sexual abuse compared to women. This is noteworthy given men had higher perpetration rates of image-based sexual abuse than the women in the study (Henry et al., 2019). Some participants have also endorsed beliefs that non-consensual sext dissemination to others was normal or funny (Clancy et al., 2019, 2020, 2021), which may explain why some individuals do not see this behaviour as harmful. Shockingly, Brown et al. (2020) found that male participants were more likely to report that some women may feel flattered or proud to have their naked images shared without consent, with the overall results indicating that male participants misperceived the harm that disseminating a sexual image had on women. As well Lee and Downing (2019) found that individuals may engage in non-consensual dissemination because they believed consent was a constant thing and did not confirm if sharing the image with others was okay. These perceptions of image-based sexual abuse as being not serious or that dissemination is a positive outcome may influence how often individuals engage in image-based sexual abuse or how they perceive it. Starr and Lavis (2018) found that when individuals have only been in a relationship for a short period of time (i.e., one month), participants rated the victim as more at fault if their partner disseminates their naked image as revenge pornography, versus if an image was disseminated later in the relationship (i.e., one year). Interestingly, Bothamley and Tully (2017) found no difference when they examined relationship length, but they only used general terms to describe the relationship length (i.e., short-term and long-term). Taken together, this highlights how image-based sexual abuse may be viewed as less serious when individuals are in a committed relationship. For pressure specifically, Thomas (2018) reported that some female participants would send sexual images

because their partners would tell them how normal it was, which left the females wanting to “live up to standards of a ‘normal’ or ‘loving’ relationship” (p. 198). While this may not be coercive by itself, this could lead to avenues where coercion is used. To the best of my knowledge, no studies on motivations for sext coercion or perceptions of it exist. In another direction, Roberts and Ravn (2019) interviewed focus groups of university men, and results highlighted how ambiguous consent can be through these online, asynchronous devices and applications, where misunderstandings and crossing boundaries may have a higher likelihood of happening. These misperceptions may then contribute to perceptions of what is coercive or not.

Face-to-face coercive situations may have the unconscious danger of physical force or violence, which may change perceptions of severity or coerciveness. Pain (1997) noted that in general, between 23% to 45% of women feared sexual or physical violence in their homes by either a stranger or someone they knew. As well, women that have experienced previous in-person sexual coercion victimization have been shown to perceive more risk for future violence in their relationship (Harding & Helweg-Larsen, 2008). To the best of my knowledge, it is still unclear if online coercive situations have an unconscious danger of physical force or violence. While this study only touches upon perceptions of violence from online sexual coercion, future studies should directly examine in-person versus online sexual coercion.

Besides the relationship type and coercion type, there are many reasons why people may differ in their perceptions of coercive strategies. This study also focused on which dark personality traits may influence this interpretation.

### **Dark Personality Traits**

The Dark Tetrad is the expansion of the Dark Triad (i.e., narcissism, Machiavellianism, psychopathy; Jonason et al., 2014; Paulhus & Williams, 2002), which added in sadism (Buckels

et al., 2013; Chabrol et al., 2009). This tetrad focuses on subclinical levels of these personality traits (Buckels et al., 2013; Paulhus & Williams, 2002). Narcissism is characterized by impulsivity, a grandiose sense of self, and shares self-enhancement and manipulation with both psychopathy and Machiavellianism (e.g., Jones & Figueredo, 2013; Jones & Paulhus, 2011; Paulhus & Williams, 2002). Machiavellianism is marked by the tendency to plan, deceive, and amorality (Christie & Geis, 1970, as cited in Jones & Paulhus 2014; Jones & Paulhus, 2014). Psychopathy has been linked to impulsivity, callousness, and a lack of empathy (Hare, 1996; Jones & Paulhus, 2011), and sadism is marked by enjoying cruelty and hurting others (Buckels et al., 2013).

In in-person (face-to-face) scenarios, the Dark Triad traits have been associated with aggression, harassment, and sexual violence (e.g., Blinkhorn et al., 2015; Knight & Guay, 2018; Paulhus & Williams, 2002; Zeigler-Hill et al., 2016). Psychopathic traits have been associated with sexual coercion perpetration in both men and women (e.g., Abbey et al., 2011; Hoffman & Verona, 2018; Muñoz et al., 2011) and taking more sexual risks (Kastner & Sellbom, 2012). Carton and Egan (2017) noted that, of the Dark Triad traits, psychopathy was the strongest predictor of sexual abuse in relationships. When examining sadism, it was positively associated with both sexual coercion and sexual aggression in community men (e.g., Klann, 2017; Russell & King, 2016), but only indirectly associated with sexual violence in women (Russell et al., 2017). There have been mixed findings with narcissism and sexual coercion specifically. Some studies have found that narcissism did not predict sexual coercion (Klann, 2017), while others report it does for both men and women (Blinkhorn et al., 2015). Interestingly, narcissism in men may be more tied to the stereotypical ‘grandiose’ narcissist while narcissism in women may be more closely tied to manipulateness and more Machiavellianism (e.g., Ackerman et al., 2011;

Blinkhorn et al., 2015). Machiavellianism also has mixed findings with sexual coercion, with some studies reporting it negatively predicted sexual coercion (Klann, 2017) and others reporting no association (Jones & Olderbak, 2014). When separating coaxing (e.g., seducing, etc.) and coercion (e.g., threats, physical harm, etc.) Jones and Olderbak (2014) reported that only psychopathy predicted sexual coercion, while narcissism, Machiavellianism, and psychopathy all predicted sexual coaxing. Whether the dark personality traits influence online sexual coercion usage in similar ways as they influence in-person sexual coercion usage remains to be studied in depth.

For online scenarios and image-based sexual abuse, Pina and colleagues (2017) found that having higher psychopathy, narcissism, and Machiavellianism scores correlated with being more likely to engage in revenge pornography perpetration. Sadism showed non-significant results “with revenge porn proclivity”, possibly because the sample was made up of mostly women, who tend to be lower in sadistic tendencies than men (Pina et al., 2017, p. 38). When examined further, psychopathy had the strongest influence of the dark personality traits on revenge porn proclivity, as it was the only dark personality trait to show independent significance (Pina et al., 2017). Harper et al. (2022) utilized a sample with fewer women and found sadism to be a significant predictor of revenge porn proclivity, alongside psychopathy. When examined with *enjoying* revenge porn, psychopathy, narcissism, and sadism were all significant predictors (Karasavva et al., 2022). The Dark Triad personality traits have been found to increase the likelihood that individuals have and will perpetrate image-based sexual abuse sext dissemination (Clancy et al., 2019, 2020). Karasavva (2020) examined the Dark Tetrad and image-based sexual abuse perpetration and victimization. Results indicated that psychopathy, narcissism, and sadism were positively correlated with both perpetration and victimization.

When included in regressions, psychopathy and narcissism remained significant when examining perpetration (Karasavva, 2020). In sum, the dark personality traits appear to be linked with an increase of image-based sexual abuse perpetration, but since only a few studies have examined this and results have varied, more research must be done to confirm this association.

To date, there is still very little research that has examined the Dark Tetrad and sexting coercion perpetration or victimization specifically. However, some studies examining the dark traits in other online contexts have looked at primary and secondary psychopathy. Those with primary psychopathy lack affective traits and feelings of anxiety, which often lead them to be callous and manipulative (Hicks & Drislane, 2018). Those with secondary psychopathy can feel anxiety and are more impulsive and aggressive (Hicks & Drislane, 2018). Nevin (2015) found that those higher in primary psychopathy rated an “online” sexual pushiness (i.e., “any behaviours that involve repeated unwanted sexual advances toward another person in an internet space [e.g., chatroom], as well as traditional sexual harassment or sexual coercion that is translated into the online realm”; Barak, 2005, as cited in Nevin, 2015, p. 38) scenario as more acceptable and rated themselves as more likely to engage in that behaviour. Their vignette involved an individual messaging with someone in a chatroom, requesting photos of the person, and continuing to ask and send sexual messages even after the other person turned them down (Nevin, 2015). When examined more broadly, Hernández et al. (2021) examined sexual online behaviours in adolescents and found that the likelihood of sexting increased for those that were higher in disinhibition, and that had less empathy. These are features commonly associated with the dark personality traits. As well, Kurek et al. (2019) found positive associations between online disinhibition and sadism and narcissism, and a negative association between online disinhibition and psychopathy (Machiavellianism was omitted due to low scale reliability). When

measured directly and through mediation with cyber aggression, online disinhibition, psychopathy, and sadism all predicted increased aggression online (Kurek et al., 2019). These findings indicate that those with the dark traits may be more inclined to engage in sexting and cyber aggression. Whether this leads individuals one step further, to coercing others for sexual images online, should be examined in future research.

Studies examining the dark triad traits with moral disengagement (measured as a trait) have found positive correlations between them, with psychopathy having moderate to strong correlations ( $r = .42 - .82$ ), Machiavellianism having moderate correlations ( $r = .31 - .53$ ), and narcissism having weaker correlations ( $r = .18 - .28$ ; Brugués & Caparrós, 2021; Clemente et al., 2019; Egan et al., 2015; Nocera et al., 2021; Tanrikulu & Erdur-Baker, 2019). Psychopathy and Machiavellianism have also predicted moral disengagement in regression analyses (Egan et al., 2015). When sadism and moral disengagement were examined, a strong positive correlation was found ( $r = .88$ ; Nocera et al., 2021), and when examined in a mediation analysis, moral disengagement partially mediated the relationship between both sadism and psychopathy with the perpetration of cyber aggression. Samples in these studies consisted of university students and/or community individuals (Clemente et al., 2019; Egan et al., 2015; Nocera et al., 2021; Tanrikulu & Erdur-Baker, 2019) and offenders (Brugués & Caparrós, 2021).

Less is directly known about how these dark personality traits may influence perceptions of coercion or image-based sexual abuse both in person and online. As mentioned above, Nevin (2015) found that participants higher in primary psychopathy rated an “online” sexual coercion scenario as more acceptable. When examining “in person” sexual coercion scenarios, Swanek and Peace (2020) found that the more psychopathic traits undergraduate students had, the less coercive their vignettes were rated (independent variables included level of coercion, type of

coercion, and sexual history). Among a sample of female undergraduates, those that had higher primary psychopathy scores and had previously used sexual coercion tactics were more likely to endorse using coercion tactics in a sexual coercion vignette (H. Miller et al., 2017). When examining the Dark Triad and sexual harassment in women, Brewer and colleagues (2021) found that only those high in primary psychopathy assigned the least amount of blame to the perpetrator and indicated that the victim should comply with the sexual harassment and not confront the perpetrator. For narcissism specifically, it has been reported that single men are more accepting of sexual coercion if they report more narcissistic traits, low self-esteem, and have been reminded of being let down by someone close to them (Lamarche & Seery, 2019). The focus of this study is on perceptions of online coercion, but future studies should be conducted to examine both in-person and online perceptions in order to better understand the association.

Given these links and the similarities between in-person and online sexual coercion, it seems plausible that having higher dark personality trait levels would influence online coercion usage and perceptions. But whether the dark traits influence in similar or differing ways as it does in-person coercion should be examined in future studies.

### **The Present Study**

A lot of research has examined face to face interactions, with the study of online interactions being more recent as technology has become prominent. Due to the harm that online victimization can inflict (Flynn et al., 2016; Humelnicu, 2017), it is important to treat it as serious and learn more about perpetration rates for image-based sexual abuse and sexting coercion, as well as what factors, such as the dark personality traits, may influence how online coercion is perceived.

This study aimed to fill that gap by investigating the association between levels of dark personality traits, moral disengagement, and rates of perpetration of image-based sexual abuse and sexting coercion, and how these factors (along with relationship type and coercion tactics) may influence how individuals perceive coercion tactics that are used to obtain sexual or naked images of others online. First, I measured participants' past experiences with perpetration of both image-based sexual abuse and sexting coercion and compared them to their scores on the dark traits and propensity to morally disengage. Second, participants read a short vignette to see if their dark trait scores, moral disengagement, and past perpetration influenced their perceptions of the online coercive scenarios. The vignettes utilized a 2 (coercive tactic: hinting or threatening) x 3 (relationship: strangers, recently matched/casually, or dating/committed relationship) between-subjects design.

### **Research Questions and Hypotheses**

**Question 1.** What is the relationship between the Dark Tetrad traits and image-based sexual abuse perpetration?

**Hypothesis 1:** Studies have found that those higher in psychopathy, Machiavellianism, and narcissism had perpetrated more image-based sexual abuse, and that those higher in sadism were more likely to be victims of image-based sexual abuse (e.g., Clancy et al., 2019, 2020; Karasavva, 2020; Pina et al., 2017). To that end, I hypothesized that individuals higher in psychopathy, Machiavellianism, and narcissism would have higher image-based sexual abuse perpetration scores.

**Question 2.** What is the relationship between the Dark Tetrad traits and sexting coercion perpetration?

**Hypothesis 2:** To the best of my knowledge, there are no studies on this. However, given the general exploitative and aggressive nature of individuals with Dark Tetrad traits (Jones & Figueredo, 2013 Klann, 2017; Russell & King, 2016), I expected that individuals higher in Dark Tetrad traits would engage in more sexting coercion perpetration.

**Question 3.** What is the relationship between moral disengagement and the Dark Tetrad traits? What is the relationship between moral disengagement and image-based sexual abuse perpetration? What is the relationship between moral disengagement and sexting coercion perpetration?

**Hypothesis 3:** Positive associations have been found between moral disengagement and all of the Dark Tetrad traits (Brugués & Caparrós, 2021; Clemente et al., 2019; Egan et al., 2015; Nocera et al., 2021; Tanrikulu & Erdur-Baker, 2019). I hypothesized that scoring higher on the Dark Tetrad traits would be associated with higher moral disengagement scores.

**Hypothesis 4:** The association between moral disengagement and image-based sexual abuse perpetration was exploratory.

**Hypothesis 5:** The association between moral disengagement and sexting coercion perpetration was exploratory.

**Question 4.** Does having higher or lower levels of the Dark Tetrad traits change how the online coercion scenario is perceived?

**Hypothesis 6:** Past studies have found that individuals with more psychopathic traits perceived sexual coercion to be more acceptable (Brewer et al., 2021; H. Miller et al., 2017; Nevin, 2015; Swanek & Peace, 2020). With narcissism, single men that report more narcissistic traits have also been noted to be more accepting of sexual coercion (Lamarche & Seery, 2019). This study is limited in that it did not examine women as well. To the best of my knowledge,

there have not been any studies that examined coercion perceptions with sadism or Machiavellianism. I hypothesized that those higher in psychopathic traits would perceive the coercion to be more acceptable. Given the limited previous research on the topic, my analysis on participants of all genders scoring high on sadism, narcissism, and Machiavellianism was exploratory.

**Question 5.** Does past image-based sexual abuse perpetration influence how the online coercion scenario is perceived? Does past sexting coercion perpetration influence how the online coercion scenario is perceived?

**Hypothesis 7:** The association between image-based sexual abuse perpetration and how the scenario was perceived is exploratory.

**Hypothesis 8:** The association between sexting coercion perpetration and how the scenario was perceived is exploratory.

**Question 6.** Does the changing the relationship of the individuals in the scenario influence how the online coercion scenario is perceived? Does the tactic used influence how the online coercion scenario is perceived?

**Hypothesis 9:** Due to studies finding that coercion is perceived as less bad the more committed the relationship (Arriaga et al., 2016; Freetly & Kane, 1995), that more subtle tactics are often seen as okay (Camilleri et al., 2009) and that verbal coercion can also be on a spectrum (Camilleri et al., 2009; Livingston et al., 2004; Koss et al., 2007), I predicted that when the couple in the scenario were in a committed relationship and the hinting tactic was used, participants would rate the vignette as least coercive.

## Method

### Participants

Participants were undergraduate students at Carleton University, and the study was completed online. Students received course credit for participation. Based on an *a priori* power analysis using G\*Power (Faul et al., 2009), for a hierarchical regression with a small effect of .03 and power of .80, 403 participants were needed. As well, based on an *a priori* power analysis using G\*Power (Faul et al., 2007), for an ANCOVA with a small effect of .10 or a moderate effect of .25, and power of .80, between 158 and 967 participants were needed.

A total of 1682 participants were recruited. Of those, 11 were removed for not consenting to the study, 26 were removed for withdrawing, 44 were removed for completing less than 50% of the study, 120 were removed for getting more than two of the five attention checks wrong, and 14 were removed for having both vignette attention checks wrong. The final sample consisted of 1467 participants. Their ages ranged from 16 – 59 ( $M = 19.85$ ,  $SD = 4.04$ ). The majority were women (Woman: 72.1%; Man: 24.3%; Non-binary: 1.8%; Gender fluid: 0.8%; Trans man: 0.5%; Other: 0.3%; Two-spirit: 0.1%) and heterosexual (Heterosexual: 74.1%; Bisexual: 16.5%; Homosexual: 3.7; Pansexual: 3.3%, Other: 1.4%; Asexual: 1.0%). For ethnic background, just over half were White (58.2%), followed by Asian (10.7%), Black (10.2%), Middle Eastern (6.7%), Mixed (3.8%), Other (3.8%), Indigenous (2.9%), Hispanic/Latinx (2.3%), and East Indian (1.4%).

## **Measures**

### ***Demographic Questionnaire***

Participants were given a demographic questionnaire (see Appendix A) to collect information about their age, gender, sexual orientation, and race/ethnicity. They were free to skip questions they do not want to answer.

### ***Self-Report Psychopathy Scale 4th Edition: Short Form***

The Self-Report Psychopathy Scale 4th Edition: Short Form (SRP 4:SF; Paulhus et al., 2016) is a 29-item self-report questionnaire that assess psychopathic traits in offender, community, and university samples. This measure is similar to the Psychopathy Checklist - Revised (Hare, 2003) by assessing the 4 facets of psychopathy (i.e., interpersonal, affective, lifestyle, and antisocial) that load onto 2 factors (i.e., Factor 1 is interpersonal and affective, and Factor 2 is lifestyle and antisocial). Responses are collected on a 5-point Likert scale where participants indicate to what degree they believe in each statement (e.g., “I never feel guilty over hurting others”; 1 = *strongly disagree* to 5 = *strongly agree*). Responses are summed to create 4 Facet scores, 2 Factor scores, and a Total score. For analyses, the total score was used.

This measure has displayed high Cronbach’s alphas for the total, factors, and facet subscales ( $\alpha$ ’s from .71 to .87) and good convergent, discriminant, and construct validity (e.g., Seara-Cardoso et al., 2020; Tew et al., 2015).

### ***Comprehensive Assessment of Sadistic Tendencies***

The Comprehensive Assessment of Sadistic Tendencies (CAST; Buckels & Paulhus, 2013; Appendix B) is made up of 18 items (e.g., “I enjoy making jokes at the expense of others”) that assess everyday sadism on 3 subscales (i.e., vicarious, verbal, physical). Item responses range from *strongly disagree* (1) to *strongly agree* (5). Scores are summed, with higher scores indicating more sadistic traits. For analyses, the total score was used.

This scale has shown high internal consistency ( $\alpha$ ’s from .80 to .89) and good test-retest reliability, convergent validity (e.g., with the other dark traits: Machiavellianism, psychopathy, narcissism), and discriminant validity (Buckels, 2018; Buckels et al., 2014).

### ***Five Factor Machiavellianism Inventory – Super-Short Form***

The 15-item Five Factor Machiavellianism Inventory – Super Short Form (FFMI-SSF; Du et al., 2021; Appendix C) is a self-report questionnaire that assesses Machiavellianism in community samples, based on the Five Factor Machiavellianism Inventory (FFMI; Collison et al., 2018). Responses are collected on a 5-point Likert scale (1 = *disagree strongly* to 5 = *agree strongly*) and summed, with higher scores implying more Machiavellian traits. This measure has a Total score and three factor scores (i.e., Antagonism, Agency, and Planfulness). The longer Five Factor Machiavellianism Inventory (Collison et al., 2018) was developed to separate Machiavellianism from psychopathy and keep it in line with experts construct conceptualizations, both of which other Machiavellianism measures do not do (Collison et al., 2018). This super-short form does as well. For analyses, the total score was used.

Overall, in three samples (Du et al., 2021), the FFMI-SSF factors displayed adequate to good internal consistency ( $\alpha = .63$  to  $.81$ ), and both factors and total score displayed high correlations with the FFMI ( $r = .84$  to  $.93$ ). Antagonism displayed moderate positive correlations with other measures examining Machiavellianism ( $r = .57$  -  $.60$  with SD3 Machiavellian subscales to  $r = .69$  with MACH-IV), Planfulness displayed negative correlations ( $-.22$  to  $-.45$ ), and Agency both positively and negatively correlated with other measures of Machiavellianism.

#### ***Five-Factor Narcissism Inventory – Super-Short Form***

The Five-Factor Narcissism Inventory – Super-Short Form (FFNI-SSF; Packer West et al., 2021; Appendix D) is a self-report questionnaire designed to assess subclinical narcissism in a shorter version of the Five-Factor Narcissism Inventory- Short Form (Sherman et al., 2015). The scale consists of 15-items that are collected on a 5-point Likert scale (1 = *disagree strongly* to 5 = *agree strongly*) and summed, with higher scores implying more narcissistic traits. This measure can also be split into three factors (Antagonism, Neuroticism, and Agentic Extraversion)

or two conceptualizations of narcissism (Grandiose and Vulnerable). For analyses, the total score was used.

Across four samples (Packer West et al., 2021), this shorter measure of narcissism displays adequate to good internal consistency for the total score ( $\alpha = .58 - .74$ ), adequate to good internal consistency for the two conceptualizations ( $\alpha = .60 - .78$ ), and adequate to good internal consistency for the three factor scores ( $\alpha = .52 - .80$ ). There is high convergent validity between the FFNI-SSF and the FFNI-SF ( $r = .80 - .96$ ).

### ***Propensity to Morally Disengage Scale***

The Propensity to Morally Disengage Scale (Moore et al., 2012; Appendix E) is a self-report questionnaire that has been made to consist of either 24-, 16-, or 8-items to assess an individual's propensity to engage in moral disengagement. The scale includes a total score and 8 subscales that examine the mechanisms of moral disengagement (e.g., moral justification, euphemistic labelling). Items are scored on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*) and summed, with higher scores indicating a higher propensity to morally disengage. For this study, 30% of items were changed to be reverse scored, and the 8-item length was used, with the total score being used for analyses.

This measure demonstrates good internal consistency across all 3-scale lengths ( $\alpha$ 's = .70 - .95; Clemente et al., 2019; Hadlington et al., 2021; Knoll et al., 2016; Moore et al., 2012; Tanrikulu & Erdur-Baker, 2019) and has shown good convergent and divergent validity (Moore et al., 2012).

### ***Image-Based Sexual Abuse Perpetration scale***

The Image-Based Sexual Abuse Perpetration scale (Powell et al., 2019; Appendix F) is a self-report questionnaire consisting of 24 items designed to assess past perpetration of image-

based sexual abuse since the age of 16. The questionnaire includes 3 specific subscale behaviours (i.e., taken, distributed, threatened to distribute a sexual or naked image) with the same 8 questions asked about each (e.g., “Where they were completely nude”). Responses for each question are asked in a YES/NO format, and responses are summed to create a continuous score for each subscale and a total score. For analyses, the total score was used. Cronbach’s alpha for this scale have been high, with internal consistency between .84 and .89 for total, threat, and distribute (Karasavva, 2020). Due to this study focusing on online behaviours, the “Taken” subscale was not included, making the Total score 16 instead of 24. As well, if a participant chose “Yes” for any of the items, a question asking about the relationship type between the participant and their victim(s) at the time of the offence was included, as well as a question asking the gender of their victim(s).

### ***Sexual Coercion in Intimate Relationships Scale - Perpetration***

An adapted version of the 34-item Sexual Coercion in Intimate Relationships Scale (SCIRS\_S; Goetz & Shackelford, 2010; Appendix G) were used to assess men and women’s *perpetration* of *sexting* coercion in a current or most recent relationship (e.g., “I pressured my partner to send me a sexually explicit picture or video against his/her will”). Participants are told to think of their current relationship or most recent past relationship. Responses are collected on a 6-point Likert scale ranging from 0 (*the act did not occur*) to 5 (*act occurred 11 or more times*).

The scale has a total score, along with subscale scores (i.e., resource manipulation/violence, commitment manipulation, and defection threat). Resource manipulation/violence involves the withholding of gifts or threats or use of violence. Commitment manipulation involves using the relationship against the other individual. Defection

threat involves threatening to find other relationship partners. Responses are summed for a total score of 170 for perpetration. Two items pertaining to in-person interactions were removed due to this study focusing on online behaviours, bringing the summed total to 160. For analyses, the total score was used. As well, items were adapted to be more gender inclusive (e.g., he/she changed to they). The SCIRS includes different coercive tactics that may be used (e.g., hinting, threatening, etc.). As well, participants were asked one question about the type of relationship that this behaviour occurred in (e.g., one night stand, casual dating partner, committed relationship partner, etc.), and the gender of their victim. A question was also included that participants could click if they had never been in a relationship.

This scale has been adapted in other research to measure sexting coercion victimization and has shown strong internal consistency for both the total and subscale scores ( $\alpha$ 's above .90; Cornelius et al., 2020; Drouin et al., 2015; Ross et al., 2019). The original scale has shown convergent and discriminant validity when compared to other measures (Shackelford, & Goetz, 2004).

### *Vignettes*

Vignettes (see Appendix H) were created for this study that varied according to the independent variables of interest: type of relationship (strangers who recently matched on a dating application, casual dating relationship, or committed relationship), and coercion tactic (hinting or threatening). The type of relationship was manipulated so that the two individuals had either just matched on a dating application, were casually dating, or were in a committed relationship. The coercion tactic was manipulated so the perpetrator either hinted that receiving another naked image would be nice or threatened to release a previously sent one if a new naked image was not sent. This created a total of six vignettes, with participants reading one of them.

The interactions in the scenarios took place “virtually”, with the individuals messaging one another. “B” having previously sent an image to “Z”, the ages of the individuals, and Z asking for the naked image were held constant, as was the length of the vignettes.

The scenario was about Z and B in their early 20’s who were messaging one another. Z wanted another naked image of B and B said no. Despite this, B ends up sending Z a nude image of themself. Names were not included in the vignettes due to the possibility of the names biasing or influencing participants’ perceptions of the scenarios (e.g., Newman et al., 2018), as well as to create neutral scenarios for gender and sexual orientation.

The vignettes were pilot tested on a small convenience group ( $N = 27$ ) to ensure the manipulation of relationship type and coercion tactic worked. Ages ranged from 19 - 40 and were 77.77% female. Participants were asked to rate how appropriate the behaviour was for the three relationships on a 5-point Likert scale (1 = *not at all appropriate* to 5 = *very appropriate*) and rate how serious the behaviour being described was on a 5-point Likert scale (1 = *not at all serious* to 5 = *very serious*). They also could give feedback about the clarity of the vignettes and questions. As per feedback, the questions now specify that it is Z’s behaviour being assessed. For the hinting tactic, as the relationship type became more intimate, pilot test participants rated the behaviour as more appropriate, and hinting was perceived as being somewhat serious ( $\mu = 3.63$ ). For the threaten tactic, ratings of appropriateness stayed low for all three relationship types and was perceived as being very serious ( $\mu = 4.84$ ).

### ***Perceptions Questionnaire***

A Perceptions Questionnaire (see Appendix I) was created for this study to assess participants’ perceptions of the vignette they read. Some of the questions are taken or adapted from the Judgment Questionnaire created by Swanek and Peace (2020). The questionnaire

consists of 8 perceptions of coercion items (e.g., “How coercive did you find Z in this interaction to be?”), 4 face-to-face items that ask the same questions but with face-to-face interactions (e.g., “How acceptable would the Z’s behaviour be if this were face-to-face”), and 2 YES/NO questions (i.e., “Did B consent to sending a naked image of themselves?” and “Is the Z’s behaviour more acceptable because it is virtual and not face-to-face?”). Apart from the 2 YES/NO questions, responses are given on a 7-point Likert scale, with wording for some of the anchors adapted from Vagias (2006) or taken from Swanek and Peace (2020). Responses did not have a neutral option.

This study only examined the eight online coercion items, making sure they are one factor. A factor analysis of the 8-item coercion aspect of the scale was conducted to assess if it measures a unitary “coercion” construct.

### ***Attention Checks***

To assess participants’ attention, three checks were placed throughout the self-report measures. They were instructed to answer the response a certain way (e.g., “For this question, select 3”). As well, after completing the Perceptions Questionnaire, participants were asked about the relationship of the individuals and the coercion tactic to assess their attention to the scenario. See Appendix J for the items.

### **Procedure**

This study was conducted online using Qualtrics software. Participants were shown a consent form to read and fill out. First, participants completed the Demographic Questionnaire. Next, participants completed the SRP 4:SF, CAST, FFMI-SSF, FFNI-SSF, the Propensity to Morally Disengage Scale, the Image-Based Sexual Abuse perpetration, and the adapted SCIRS perpetration (the order of which were randomized) or read one of the six vignettes and complete

the Perceptions Questionnaire (the order of completing the self-report measures or the vignette and Perceptions Questionnaire were randomized<sup>1</sup>). Following that, they received a Debriefing Form that told them the purpose of the study and included references for further reading or counselling.

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<sup>1</sup> An independent samples t-test was conducted to examine if receiving Part A or Part B first influenced “Coercion” scores. The analysis revealed no group differences,  $t(1462) = -1.931, p = .054$ .

## Results

### Missing Data

Participants were allowed to skip any question they did not want to answer or felt uncomfortable answering. Missing values were analyzed with gender using a chi-square test to determine if there were differences between those with missing or completed data. The chi-square results for all the variables except Propensity to Morally Disengage were non-significant ( $p$ 's > .05), indicating that data was missing at random. Propensity to Morally Disengage was significant ( $p = .035$ ), suggesting there was a difference between genders and responding to the scale. Using only male and female participants, correlations were run with a dichotomous Propensity to Morally Disengage 'Missing versus Not' variable and the dependent variables (image-based sexual abuse perpetration and sexting coercion perpetration). Bivariate correlations were not significant ( $p$ 's = .53 and .85, respectively), indicating that the missing Propensity to Morally Disengage values did not affect the outcome variables. A discussion as to why men may be hesitant to answer such a scale is given in the Discussion section. Pairwise deletion was used for missing values in correlations and hierarchical regression analyses while listwise deletion was used in binomial logistic regressions, ANOVA, and ANCOVA analyses. The number of missing values is shown in Table 3.

For the sexting coercion scale, participants could skip it if they had never been in a relationship. 354 participants had never been in a relationship. Additionally, due to a Qualtrics error, 66 participants gave a relationship type but also reported never being in a relationship and skipped the scale, and 47 participants gave a relationship type, reported never being in a relationship, and completed the scale. These 47 responses were not counted towards total sexting coercion perpetration scores.

### Normality

The skewness and kurtosis values of the measures were examined to determine normality. Skewness that exceeded 2 and kurtosis that exceeded 3 were considered not normal. The SRP4:SF total score, CAST total score, FFMI-SSF total score, FFNI-SSF total score, and the Propensity to Morally Disengage scales were all normally distributed, while the IBSA Perpetration and SCIRS\_S Perpetration scales were not (see Table 3). An attempt was made to transform the data using the log, square root, and cube root, but this did not fully correct the skewness or kurtosis or resulted in error messages. After statistical consultation, the perpetration scores were dichotomized, with any endorsement of perpetration coded as 1 while no endorsement was 0. This was done for three reasons: 1) to reduce the skewness and kurtosis and because dichotomous variables do not require the normality assumption; 2) because knowing about any perpetration is important due to the harms even one instance of victimization can have; and 3) dichotomizing perpetration or victimization variables can help reduce telescoping (e.g., Dufour, 2022).

### **Outliers**

To determine if there were any influential outliers, Spearman's Rho was run alongside Pearson's correlations with the SRP4:SF total score, CAST total score, FFMI-SSF total score, FFNI-SSF total score, the Propensity to Morally Disengage score, and the "Coercion" factor score. Spearman's Rho can be used for non-parametric data to reduce an outlier's effect by ranking the data (e.g., Field, 2013). Correlations did not significantly vary between this and Pearson's correlation values. See Table 2 for the Pearson correlations.

### **Table 2**

*Bivariate Correlations Between Dark Tetrad, Moral Disengagement Propensity, Perpetration Variables, and Coercion Factor*

Scales	1	2	3	4	5	6	7
1. Coercion Factor	1						
2. SRP4:SF	-.16***	1					
3. CAST	-.19***	.70***	1				
4. FFMI-SSF	-.10***	.14***	.22***	1			
5. FFNI-SSF	-.09***	.57***	.45***	.18***	1		
6. PMDS	-.22***	.43***	.40***	.13***	.36***	1	
7. IBSA Perpetration (Dichotomized)	-.05	.23***	.21***	.08**	.19***	.11***	1
8. SCIRS_S Perpetration (Dichotomized)	-.17***	.18***	.17***	.08*	.18***	.16***	.14***

*Note.* SRP4:SF = Self-Report Psychopathy Scale 4th Edition: Short Form (Paulhus et al., 2016). CAST = Comprehensive Assessment of Sadistic Tendencies (Buckels & Paulhus, 2013). FFMI-SSF = Five Factor Machiavellianism Inventory – Super Short Form (Du et al., 2021). FFNI-SSF = Five-Factor Narcissism Inventory – Super-Short Form (Packer West et al., 2021). PMDS = Propensity to Morally Disengage (Moore et al., 2012). IBSA Perpetration = dichotomized Image-Based Sexual Abuse – Perpetration (Powell et al., 2019). SCIRS\_S Perpetration = dichotomized Sexual Coercion in Intimate Relationships Scale\_Sexting (Goetz & Shackelford, 2010).

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

### Internal Consistency and Descriptive Statistics

Cronbach's alpha was used to assess the reliability of a scale. Table 3 shows the alpha values for the scales. Alphas of .7 or higher indicate good internal consistency (Bland & Altman, 1997), but .64 is within the usual range for the FFNI-SSF measure (Packer West et al., 2021). As well, the low alpha for the FFMI-SSF total score can be explained “due to the negative correlations between subscales. This is not a limitation, but instead can be expected when measuring a multidimensional construct comprised of a relatively uncommon configuration of traits” (Sharpe et al., 2021, p. 668). Caution is warranted with the Propensity to Morally Disengage scale due to the low alpha value; items were reverse scored prior to calculating alpha, but the low value is potentially due to altering item wording to create reverse scored items for this study. Means and standard deviations for each scale is included in Table 3.

Table 3

*Descriptive Statistics, Range, Internal Consistencies, and Missing Data of Measures*

Scale	<i>M</i>	<i>SD</i>	Range	Cronbach's $\alpha$	Skewness	Kurtosis	Missing Data
SRP4:SF	51.20	14.59	28 - 107	.89	.71	0.09	10
CAST	31.84	10.01	17 - 72	.86	0.98	.044	15
FFMI-SSF	36.52	5.52	19 - 59	.55	0.03	0.13	6
FFNI-SSF	40.27	7.04	15 - 64	.64	-0.11	0.08	11
PMDS	20.68	5.92	5 - 44	.50	0.37	0.20	11
IBSA - Perpetration	.26	1.16	0 - 16	.87	7.29	69.76	24
SCIRS_S - Perpetration	.72	5.58	0 - 98	.98	13.63	206.55	467

*Note.* SRP4:SF = Self-Report Psychopathy Scale 4th Edition: Short Form (Paulhus et al., 2016). CAST = Comprehensive Assessment of Sadistic Tendencies (Buckels & Paulhus, 2013). FFMI-SSF = Five Factor Machiavellianism Inventory – Super Short Form (Du et al., 2021). FFNI-SSF = Five-Factor Narcissism Inventory – Super-Short Form (Packer West et al., 2021). PMDS = Propensity to Morally Disengage (Moore et al., 2012). IBSA – Perpetration = Image-Based Sexual Abuse – Perpetration (Powell et al., 2019). SCIRS\_S – Perpetration = Sexual Coercion in Intimate Relationships Scale\_Sexting (Goetz & Shackelford, 2010).

**Factor Analysis of the Perceptions Questionnaire Coercion Items**

For ease of analysis, reverse-scored items were examined after being reverse coded. To ensure the data was suitable for a factor analysis, assumption checks were completed. Inspection of the correlation matrix showed that all eight variables had at least one correlation coefficient greater than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.86 with individual KMO measures at least 0.7, classifications of 'middling' to 'meritorious' according to Kaiser (1974). Bartlett's test of sphericity was statistically significant ( $p < .001$ ), indicating that the data could undergo a factor analysis.

To determine the number of factors to retain, a visual inspection of the scree plot was used alongside the eigenvalues and interpretability. The eigenvalues of the first two factors were 3.61 and 1.088, with the rest being below one (factor three was 0.81). Factor one explained 45.1% of the total variance and factor two explained 13.6% of the total variance. The scree plot showed a significant decline in the eigenvalues between factors one and two with no other steep

declines with other factors. Cattell (1966) described this bend as where factors no longer become important. Lastly, when examining whether the two factors would be interpretable, the component matrix showed that all eight items loaded onto the first factor, often stronger than they loaded onto factor 2, and the varimax rotated component matrix did not have a clear interpretation, as well as still having cross loadings with two items. Overall, the results pointed towards a one-factor structure of the eight items. The communalities of the eight items were all above .4 so all the items were kept in the one factor.

To confirm this judgement, a parallel analysis was run using 100 random datasets and 95 percent confidence. Watkins (2018) gives a detailed description:

Parallel analysis statistically simulates a set of random data with the same number of variables and participants as the real data. That random data set is then submitted to [principal component analysis] and the resulting eigenvalues saved. This process is repeated multiple times (100 at a minimum) and the resulting set of eigenvalues averaged and compared with the components extracted from the real data. The eigenvalues extracted from real data that exceed those extracted from random data indicate the number of factors to retain (p. 230).

Results from the analysis confirmed the one factor structure of the eight items, with the randomly generated eigenvalues of the first two factors being 1.14 and 1.092, respectively. From that, a continuous Coercion variable was created by summing the eight items, with higher scores indicating the scenario was more coercive.

### **Frequencies**

The frequencies for the gender of the victims and relationship type were calculated for image-based sexual abuse perpetration (Table 4) and the frequencies for the gender of

relationship partner and relationship type were calculated for sexting coercion perpetration (Table 5). 128 participants (9%) perpetrated at least one form of image-based sexual abuse, and of those, 96 (75.0%) gave the gender and 100 (78.1%) gave the relationship type for the victims. 103 participants (10%) perpetrated at least one instance of sexting coercion in their current or most recent relationship, and 102 (99.0%) gave the relationship type and 103 (100.0%) gave the gender of their partner.

Table 4

*Frequencies for Gender of Victims and Relationship Type with Victims of Image-Based Sexual Abuse Perpetration*

	<i>N (%)</i>
Gender of Victim(s)	
Male	47 (49.0%)
Female	50 (52.1%)
Transgender	1 (1.0%)
Non-binary	0 (0.0%)
Gender-fluid	0 (0.0%)
Two-spirit	0 (0.0%)
Don't know	5 (5.2%)
Other	2 (2.1%)
Relationship Type (at the time)	
One night stand	4 (4.0%)
Booty Call	5 (5.0%)
Friend with benefits	13 (13.0%)
Casual dating partner	4 (4.0%)
Committed relationship partner	14 (14.0%)
Cheating relationship partner	6 (6.0%)
Friend (known face-to-face)	28 (28.0%)
Friend (known online only)	7 (7.0%)
Family	2 (2.0%)
Acquaintance	11 (11.0%)
Stranger	20 (20.0%)
Don't know	8 (8.0%)
Other	4 (4.0%)

*Note.* Participants could choose multiple options, so percentages may add up to more than 100%

Table 5

*Frequencies for Gender of Partner and Relationship Type with Partner of Sexting Coercion**Perpetration*

	<i>N (%)</i>
Gender of Partner	
Male	58 (56.3%)
Female	39 (37.9%)
Transgender	3 (2.9%)
Non-binary	2 (1.9%)
Gender-fluid	0 (0.0%)
Two-spirit	0 (0.0%)
Don't know	1 (1.0%)
Other	0 (0.0%)
Relationship Type (at the time for past relationships; currently for current ones)	
One night stand	1 (1.0%)
Booty Call	4 (3.9%)
Friend with benefits	16 (15.7%)
Casual dating partner	16 (15.7%)
Committed relationship partner	62 (60.8%)
Cheating relationship partner	1 (1.0%)
Other	2 (2.0%)

*Note.* Participants could only choose one option, so percentages add up to 100%

**Regressions*****Research Question 1***

To assess if the dark personality traits influenced the likelihood of perpetrating image-based sexual abuse, a binomial logistic regression was run with gender, sexual orientation, moral disengagement propensity, psychopathy, sadism, Machiavellianism, and narcissism.

Assumptions were checked, and possible outliers noted. Leverage scores and Cook's Distance were calculated to determine how influential outliers were. All leverage values were below .2 and Cook's values were below 1, indicating outliers were not heavily influencing results and that all data points could be kept in. Multicollinearity was assessed by examining the correlation matrix between the continuous predictors as well as the variance inflation factors. No correlations were greater than .70 and all variance inflation factors were under 10, indicating no

multicollinearity was present. The Box-Tidwell (1962) procedure was used to assess the linearity of the continuous independent variables with the logit of the dependent variable. A Bonferroni correction was applied using all 13 terms in the model, which resulted in statistical significance being accepted when  $p < .004$ . All continuous independent variables were linearly related to the logit of the dependent variable.

The Hosmer and Lemeshow Test was significant ( $p = .043$ ), indicating poor model fit. This test has been criticized for having too much statistical power as the sample size increases, and that the number of groups (default is ten) can influence the outcome of the test (Paul et al., 2013). SPSS uses ten groups, which may not be suitable for sample sizes over 1000 (Paul et al., 2013). The omnibus tests of model coefficients was significant, indicating the model with predictors fit the data significantly better than the null model with no predictors,  $\chi^2(7) = 91.12, p < .001$ . The model explained 14.6% of the variance and correctly classified 91.3% of cases. Sensitivity was 3.4%, specificity was 99.8%, positive predictive value was 66.7%, and negative predictive value was 91.4%. Of the seven predictor variables, three were statistically significant: psychopathy, sadism, and narcissism (see Table 6). Higher psychopathy, sadism, and narcissism scores was associated with an increased likelihood of perpetrating image-based sexual abuse<sup>2</sup>.

Table 6

*Binomial Logistic Regression Predicting Likelihood of Image-Based Sexual Abuse Perpetration*

	<i>B</i>	SE	Wald	<i>p</i>	OR	95% CI for OR	
						Lower	Upper
Gender	.45	.26	2.99	.084	1.57	.94	2.61
Sexual Orientation	.11	.24	.21	.646	1.12	.70	1.78
Moral Disengagement Propensity	.01	.02	.15	.700	1.01	.97	1.04

<sup>2</sup> An image-based sexual abuse perpetration variable that excluded the gendered items 7 and 8 was computed and the binomial regression re-run. Results did not significantly differ.

Psychopathy	.03	.01	7.10	.008	1.03	1.01	1.05
Sadism	.03	.01	4.59	.032	1.03	1.00	1.06
Machiavellianism	.02	.02	.98	.322	1.02	.98	1.06
Narcissism	.05	.02	7.86	.005	1.05	1.02	1.09
Constant	-8.17	.97	71.15	<.001	.00	-	-

*Note.* Gender compares men versus women. Sexual orientation compares heterosexual versus LGBQ+. OR = Odds Ratio; 95% CI for OR = 95% Confidence Interval for Odds Ratio. The lower bound for the 95% CI for sadism is greater than 1.00, rounding to two decimal places just makes it appear this way.

### ***Research Question 2***

To assess if the dark personality traits influenced the likelihood of perpetrating sexting coercion, a binomial logistic regression was run with gender, sexual orientation, moral disengagement propensity, psychopathy, sadism, Machiavellianism, and narcissism. Assumptions were checked, and possible outliers noted. Leverage scores and Cook's Distance were calculated to determine how influential outliers were. All leverage values were below .2 and Cook's values were below 1, indicating outliers were not heavily influencing results and that all data points could be kept in. Multicollinearity was assessed by examining the correlation matrix between the continuous predictors as well as the variance inflation factors. No correlations were greater than .70 and all variance inflation factors were under 10, indicating no multicollinearity was present. The Box-Tidwell (1962) procedure was used to assess the linearity of the continuous independent variables with the logit of the dependent variable. A Bonferroni correction was applied using all 13 terms in the model, which resulted in statistical significance being accepted when  $p < .004$  (Tabachnick & Fidell, 2014). All continuous independent variables were linearly related to the logit of the dependent variable.

The Hosmer and Lemeshow Test was not significant ( $p = .820$ ), indicating good model fit. The omnibus tests of model coefficients was significant, indicating the model with predictors fit the data significantly better than the null model with no predictors,  $\chi^2(7) = 53.72, p < .001$ .

The model explained 11.6% of the variance and correctly classified 89.9% of cases. Sensitivity was 1.1%, specificity was 99.9%, positive predictive value was 50.0%, and negative predictive value was 90.0%. Of the seven predictor variables, two were statistically significant: gender and narcissism (see Table 7). Identifying as a man and higher narcissism scores were associated with an increased likelihood of perpetrating sexting coercion.

Table 7

*Binomial Logistic Regression Predicting Likelihood of Sexting Coercion Perpetration*

	<i>B</i>	<i>SE</i>	Wald	<i>p</i>	OR	95% CI for OR	
						Lower	Upper
Gender	-.82	.28	8.75	.003	.44	.26	.76
Sexual Orientation	.32	.27	1.41	.236	1.38	.81	2.36
Moral Disengagement Propensity	.04	.02	3.11	.078	1.04	1.0	1.08
Psychopathy	.01	.01	.31	.578	1.01	.98	1.03
Sadism	.00	.02	.04	.852	1.00	.97	1.04
Machiavellianism	.00	.02	.03	.860	1.00	.96	1.05
Narcissism	.06	.02	8.69	.003	1.07	1.02	1.11
Constant	-5.75	1.07	28.69	<.001	.00	-	-

*Note.* Gender compares men versus women. Sexual orientation compares heterosexual versus LGBQ+. OR = Odds Ratio; 95% CI for OR = 95% Confidence Interval for Odds Ratio.

### ***Research Question 3***

As shown earlier with research questions 1 and 2, moral disengagement propensity was not a significant predictor for like likelihood of engaging in image-based sexual abuse perpetration or sexting coercion perpetration ( $p = .700$  and  $p = .078$ , respectively).

To assess the relationship between moral disengagement propensity and the Dark Tetrad traits, a hierarchical regression was run with gender and sexual orientation in the first step and the dark traits in the second. Assumptions were checked, and there was independence of residuals, as assessed by a Durbin-Watson statistic of 1.93. Linearity was assessed with partial

regression plots and a plot of studentized residuals against the predicted values. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. No multicollinearity was present, as variance inflation factors were below 10 and no variable correlation exceeded .70. Six cases were flagged as potential outliers, but leverage values were below .2 and Cook's Distance were below 1 so they were not very influential and retained. Lastly, normality was assessed using histograms, P-P plots, and Q-Q plots.

Model 1 containing gender and sexual orientation was significant (adjusted  $R^2 = .03$ ; Table 8). The addition of the Dark Tetrad traits to the prediction of moral disengagement propensity (Model 2) led to a statistically significant increase in  $R^2$  of .19,  $F(4, 1381) = 84.67$ ,  $p < .001$ . The full model of gender, sexual orientation, psychopathy, sadism, Machiavellianism, and narcissism to predict moral disengagement propensity was statistically significant,  $R^2 = .22$ ,  $F(6, 1381) = 65.60$ ,  $p < .001$ , adjusted  $R^2 = .22$ . In the final model, scoring higher in psychopathy ( $p < .001$ ), sadism ( $p < .001$ ), and narcissism ( $p < .001$ ) were predictive of having a higher propensity to morally disengage.

Table 8

*Hierarchical Multiple Regression Predicting Moral Disengagement Propensity*

Variable	Moral Disengagement Propensity			
	Model 1		Model 2	
	B	$\beta$	B	$\beta$
Constant	22.47***		7.14***	
Gender	-2.41***	-.177	-.33	-.02
Sexual Orientation	.08	.006	-.43	-.03
Psychopathy			.09***	.22
Sadism			.10***	.16
Machiavellianism			.03	.03
Narcissism			.13***	.15
$R^2$	.03		.22	

F	22.07***	65.60***
$\Delta R^2$	.03	.19
$\Delta F$	22.07***	84.70***

*Note.* Gender compares men versus women. Sexual orientation compares heterosexual versus LGBTQ+.

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

### ***Research Questions 4 & 5***

To assess how the Dark Tetrad traits and image-based sexual abuse perpetration and sexting coercion perpetration influenced the coerciveness of the vignettes, a hierarchical regression was run. Gender and sexual orientation were entered in the first step, moral disengagement propensity was added in step two, the dark traits were added in step three, and the IBSA and SCIRS\_S perpetration variables were added in step four.

Assumptions were checked, and there was independence of residuals, as assessed by a Durbin-Watson statistic of 1.97. Linearity was assessed with partial regression plots and a plot of studentized residuals against the predicted values. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. No multicollinearity was present, as variance inflation factors were below 10 and no variable correlation exceeded .70. Six cases were flagged as potential outliers, but leverage values were below .2 and Cook's Distance were below 1 so they were not very influential and retained. Lastly, normality was assessed using histograms, P-P plots, and Q-Q plots.

Model 1 containing gender and sexual orientation was significant (adjusted  $R^2 = .05$ ; Table 9). Adding moral disengagement propensity to the prediction of "Coercion" (Model 2) led to a statistically significant increase in  $R^2$  of .04,  $F(1, 953) = 36.33, p < .001$ . Model 3 added psychopathy, sadism, Machiavellianism, and narcissism and did not have a statistically significant  $R^2$  increase ( $p = .342$ ). The full model (Model 4) of gender, sexual orientation, moral disengagement propensity, psychopathy, sadism, Machiavellianism, narcissism, dichotomized

IBSA Perpetration and dichotomized SCIRS\_S Perpetration to predict “Coercion” was statistically significant,  $R^2 = .10$ ,  $F(9, 947) = 11.60$ ,  $p < .001$ , adjusted  $R^2 = .09$ . In the final model, being a woman ( $p < .001$ ) and not having perpetrated sexting coercion ( $p < .001$ ) were predictive of rating the vignettes more coercive and being higher in moral disengagement propensity ( $p < .001$ ) was predictive of rating the vignettes less coercive<sup>3</sup>.

Table 9

*Hierarchical Multiple Regression Predicting Coercion Scores*

Variable	Coercion							
	Model 1		Model 2		Model 3		Model 4	
	B	$\beta$	B	$\beta$	B	$\beta$	B	$\beta$
Constant	44.39***		49.49***		51.49***		50.93***	
Gender	3.39***	.21	2.84***	.17	2.45***	.15	2.21***	.14
Sexual Orientation	.60	.04	.62	.04	.62	.04	.68	.04
PMDS			-.23***	-.19	-.20***	-.17	-.19***	-.16
Psychopathy					-.02	-.05	-.02	-.04
Sadism					-.02	-.03	-.02	-.03
Machiavellianism					-.05	-.04	-.05	-.04
Narcissism					.04	.04	.05	.05
IBSA Perpetration (Dichotomized)							-.13	-.01
SCIRS_S Perpetration (Dichotomized)							-.2.66***	-.11
$R^2$	.05		.08		.09		.10	
F	23.85***		28.60***		12.91***		11.60***	
$\Delta R^2$	.05		.04		.00		.01	
$\Delta F$	23.85***		36.33***		1.13		6.49**	

*Note.* Gender compares men versus women. Sexual orientation compares heterosexual versus LGBTQ+. PDMS = Propensity to Morally Disengage (Moore et al., 2012). IBSA Perpetration = dichotomized Image-Based Sexual Abuse – Perpetration (Powell et al., 2019). SCIRS\_S Perpetration = dichotomized Sexual Coercion in Intimate Relationships Scale\_Sexting (Goetz & Shackelford, 2010).

\*\*  $p < .01$ . \*\*\*  $p < .001$ .

<sup>3</sup> An image-based sexual abuse perpetration variable that excluded the gendered items 7 and 8 was computed and the hierarchical regression re-run. Results did not significantly differ.

## ANOVA/ANCOVA

### *Research Question 6*

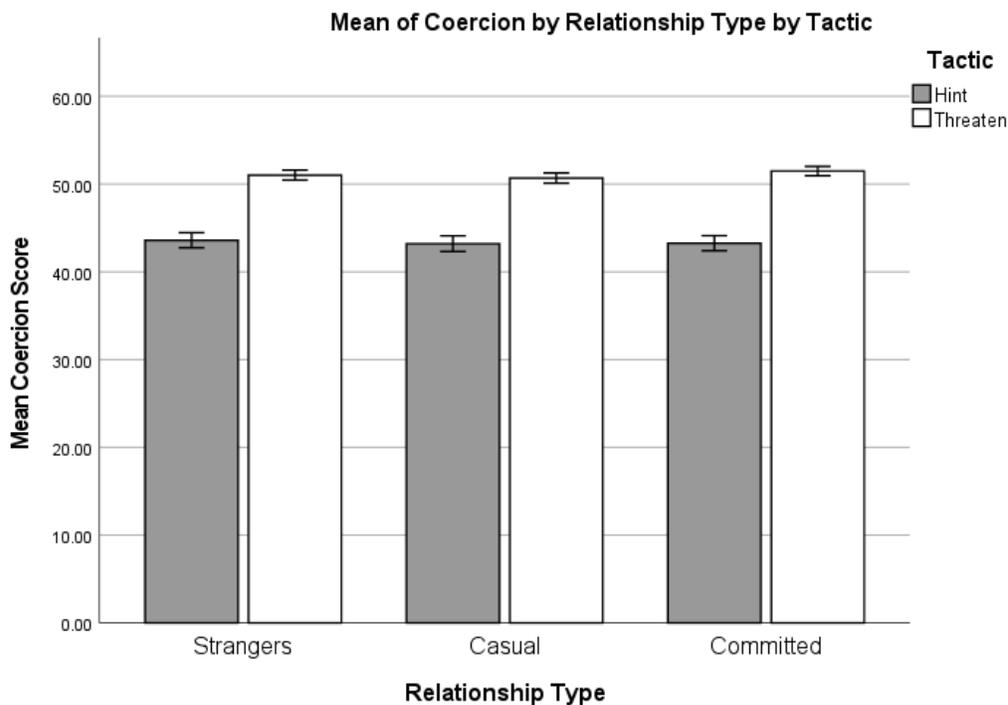
To assess the influence of relationship type and coercion tactic on perceptions of coerciveness, a two-way ANOVA was run. Residual analysis was performed to test for the assumptions of the two-way ANOVA. Outliers were assessed by inspection of boxplots, normality was assessed using skewness values of 2 and kurtosis values of 3 for the residuals, and homogeneity of variances was assessed by Levene's Test. The data showed outliers, some skewness/kurtosis, and unequal variances. The removal of ten extreme outliers brought the skewness and kurtosis down to acceptable levels except "committed, threatened" which had a kurtosis value of 3.46. Levene's test indicated unequal variances ( $p < .001$ ), but with the difference between the largest and smallest values being less than three times the size. To check whether the heteroscedasticity was influencing results, the ANOVA was re-run in R using heteroscedastic-consistent standard errors. Results did not significantly differ between the two methods, indicating the unequal variances were not influencing results and results from the SPSS output were valid. Further, the results of the original ANOVA were not significantly different from the ANOVA with some outliers removed.

ANOVA results indicated that there was no statistically significant interaction between relationship type and tactic for "Coercion" score,  $F(2, 1448) = .71, p = .492, \text{partial } \eta^2 = .001$ . Therefore, an analysis of the main effects was performed. There was no statistically significant main effect of relationship type on "Coercion" score,  $F(2, 1448) = .77, p = .465, \text{partial } \eta^2 = .001$ . There was a statistically significant main effect of tactic on "Coercion" score,  $F(1, 1448) = 640.92, p < .001, \text{partial } \eta^2 = .307$ . See Figure 3. All pairwise comparisons were run where reported 95% confidence intervals and p-values are Bonferroni-adjusted. The unweighted

marginal means of “Coercion” scores for hint and threaten were 43.36 ( $SE = .22$ ) and 51.07 ( $SE = .22$ ), respectively. The threaten tactic was associated with a mean “Coercion” score 7.71, 95% CI [7.11, 8.31] points higher than the hinting tactic, a statistically significant difference ( $p < .001$ ).

Figure 3

*Mean of Coercion by Relationship Type and Tactic*



*Note.* Error bars: 95% confidence interval.

Next, covariates were added to the model. Any variable that was significant from the final hierarchical regression model that predicted ‘Coercion’ was added (gender, moral disengagement propensity, and sexting coercion perpetration).

In testing assumptions, there was a linear relationship between ‘Coercion’ and moral disengagement propensity for each group, as assessed by inspecting a scatterplot. There was homogeneity of regression slopes as determined by a comparison between the two-way

ANCOVA model with and without interaction terms  $F(5, 1442) = 1.56, p = .170$ . There was homoscedasticity within groups, assessed through inspection of the studentized residuals plotted against the predicted values for each group. There was not homogeneity of variances, as assessed by Levene's test of homogeneity of variance ( $p < .001$ ). To check whether the heteroscedasticity was influencing results, the ANCOVA was re-run in R using heteroscedastic-consistent standard errors. Results did not significantly differ between the two methods, indicating the unequal variances were not influencing results and results from the SPSS output were valid. Possible outliers were identified as any case with a studentized residual greater than  $\pm 3$  standard deviations. All leverage values were below .2 and Cook's Distance was below 1 so no cases were removed. Normality was assessed using skewness of 2 and kurtosis of 3 for the residuals; they all had values below that except for "strangers, threaten" which had a kurtosis value of 3.34.

Means, adjusted means, standard deviations, and standard errors are shown in Table 10. Figures 4 and 5 show the effect that moral disengagement propensity had on the vignettes. There was no statistically significant interaction between relationship type and tactic on 'Coercion', while controlling for gender, moral disengagement propensity, and SCIRS\_S perpetration,  $F(2, 946) = 1.04, p = .353, \text{partial } \eta^2 = .002$ . Therefore, an analysis of the main effects was performed. There was no statistically significant main effect of relationship type on adjusted marginal mean "Coercion" score,  $F(2, 946) = .04, p = .959, \text{partial } \eta^2 = .000$ . There was a statistically significant main effect of tactic on the adjusted marginal mean "Coercion" score,  $F(1, 946) = 482.57, p < .001, \text{partial } \eta^2 = .338$ . The adjusted marginal means of "Coercion" scores for hint and threaten were 43.12 ( $SE = .25$ ) and 51.10 ( $SE = .26$ ), respectively. The threaten tactic was associated with a mean "Coercion" score 7.98, 95% CI [7.27, 8.69] points higher than the hinting tactic, a statistically significant difference ( $p < .001$ ).

Table 10

*Means, Adjusted Means, Standard Deviations, and Standard Errors for Coercion for the Six Groups*

Relationship Type	Coercion Tactic			
	Hint		Threaten	
	<i>M (SD)</i>	<i>M<sub>adj</sub> (SE)</i>	<i>M (SD)</i>	<i>M<sub>adj</sub> (SE)</i>
Strangers	43.60 (6.88)	43.56 (.44)	50.41 (5.93)	50.80 (.46)
Casual	42.78 (7.04)	42.87 (.43)	51.11 (4.36)	51.25 (.44)
Committed	43.24 (6.96)	42.92 (.44)	51.48 (4.24)	51.24 (.45)

Figure 4

*Coercion Score for Relationship Type when Accounting for Propensity to Morally Disengage Score*

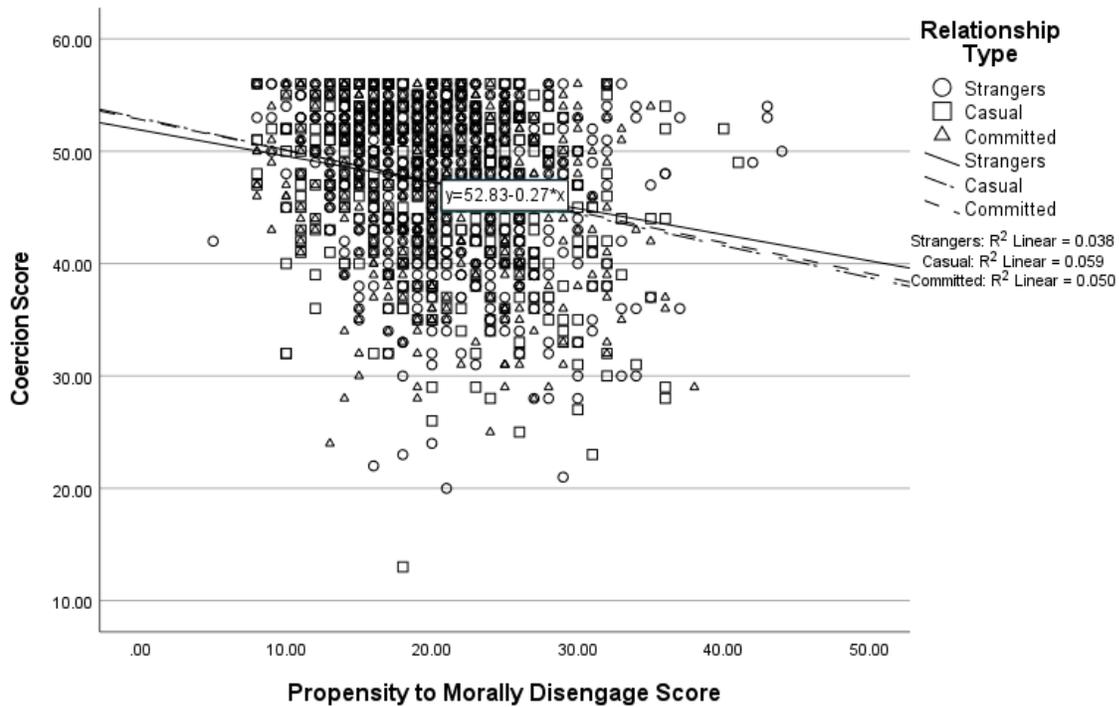
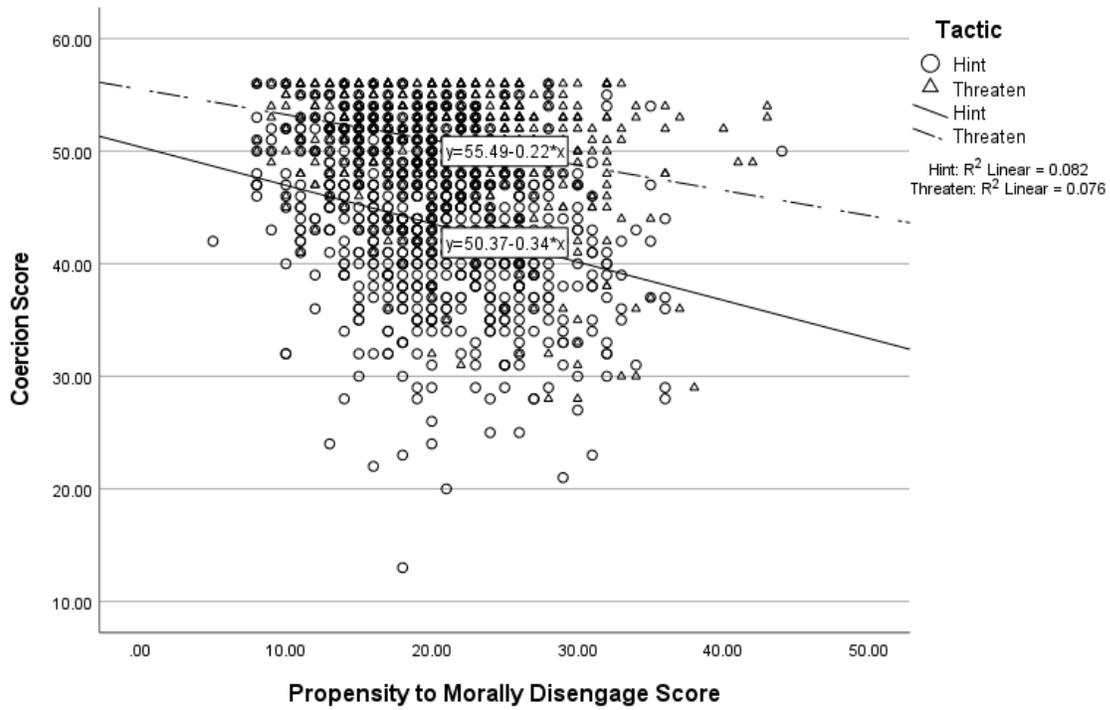


Figure 5

*Coercion Score for Tactic when Accounting for Propensity to Morally Disengage Score*



## Discussion

This study aimed to 1) examine the association between the dark personality traits (psychopathy, narcissism, sadism, Machiavellianism), moral disengagement, and past perpetration of image-based sexual abuse and sexting coercion; 2) explore how dark personality traits and past perpetration of image-based sexual abuse and sexting coercion influence how online coercion is perceived; 3) explore how the relationship status of individuals and coercive tactic used may change how online coercion is perceived.

### Relationships Between the Variables

Research questions one, two, and three assessed the relationships between the dark personality traits (psychopathy, narcissism, sadism, Machiavellianism), moral disengagement, and past perpetration of image-based sexual abuse and sexting coercion. When assessing how the dark personality traits influenced the likelihood of perpetrating image-based sexual abuse (RQ1), I found that of the roughly 9% of the sample that perpetrated at least one act of image-based sexual abuse, higher psychopathy, sadism, and narcissism were significant predictors of engaging in image-based sexual abuse perpetration. This mirrors Karasavva's (2020) findings, except they found that sadism just approached significance ( $p = .079$ ), potentially due to the use of the Short Dark Tetrad (Paulhus et al., 2021) instead of individual measures as in this study. When examining specifically distribution, sadism and narcissism have been found to be significant predictors (e.g., Clancy et al., 2020; Karasavva & Forth, 2021). Clancy et al. (2019) found that psychopathy, narcissism, and Machiavellianism were not significant in regressions when entered as independent variables and controlling for motivations but were significant as dependent variables with disseminating sexts using a MANOVA. Machiavellianism being significant could be due to the author using the Dirty Dozen scale (Jonason & Webster, 2010), or

the different analysis used, with the dark traits as dependent variables instead of independent variables. Measuring revenge porn proclivity, Pina and colleagues (2017) found that psychopathy was the only dark personality trait to significantly predict revenge porn dissemination.

When assessing how the dark personality traits influenced the likelihood of perpetrating sexting coercion (RQ2), I found that of the roughly 10% of the sample that perpetrated at least one act of sexting coercion, identifying as a man and higher narcissism were significant predictors of engaging in sexting coercion perpetration. Gassó et al. (2021) found a similar finding, with men pressuring others to sext more than women, although threatening did not have a significant gender difference. More research is needed that specifically examines sexting coercion and gender. Narcissism being significant may hint at the personal gain or entitlement aspects, using coercion is a means to get the sexually-explicit image they want from their partner. Carlson (2013) found in their study that those with narcissistic traits were aware they had them but believed that it helped them get what they wanted. Given that the SCIRS\_S involves manipulation tactics, it was unexpected that psychopathy and Machiavellianism did not significantly predict the likelihood of perpetrating sexting coercion. It could be that they become significant using the subscales of the SCIRS\_S (i.e., resource manipulation/violence, commitment manipulation, and defection threat; Goetz & Shackelford, 2010), or subscales of each dark personality trait (e.g., psychopathy being comprised of interpersonal, affective, lifestyle, and antisocial facets). Sadism not being significant may be because the sample was primarily female, who tend to be lower on measures of sadism (Pina et al., 2017), or again may be due to the use of the overall score of the SCIRS\_S (Goetz & Shackelford, 2010) which includes both subtle and overt tactics. Sadism may be more related to the resource

manipulation/violence subscale, given the inclusion of violence, since this dark personality trait has been related to hurting others (Buckels et al., 2013).

When assessing the relationship with moral disengagement propensity, the Dark Tetrad traits, and the perpetration variables (RQ3), I found that moral disengagement propensity was not a significant predictor for either image-based sexual abuse perpetration or sexting coercion perpetration. This finding should be taken with caution due to the low Cronbach's alpha value of the moral disengagement scale in this study. Future research should also examine the eight types of moral disengagement to see if any in particular are significant predictors. Interestingly, Kowalski (2014) found a small correlation between moral disengagement and cyberbullying perpetration ( $r = .27$ ) in their meta-analysis, while Nocera and colleagues (2021) found that "moral disengagement partially mediated the relationships between [both sadism and psychopathy] and cyber aggression perpetration" (p. 6). It may be that moral disengagement just does not independently predict perpetration in online situations when the dark personality traits are involved.

When examining moral disengagement propensity and the Dark Tetrad traits, higher psychopathy, sadism, and narcissism were significant predictors of a higher propensity to morally disengage. This is consistent with past findings, where moral disengagement had been positively correlated with psychopathy, sadism, and narcissism (e.g., Brugués & Caparrós, 2021; Clemente et al., 2019; Egan et al., 2015; Nocera et al., 2021; Tanrikulu & Erdur-Baker, 2019) and psychopathy has positively predicted higher moral disengagement proclivity in regression analyses (Egan et al., 2015). Conversely, past research has found Machiavellianism to be a significant predictor in regression analyses (Egan et al., 2015; Maftai et al., 2022) but not narcissism (Egan et al., 2015), while it was the opposite in this study. With Machiavellianism,

this may be due to those studies using the Short Dark Triad (Jones & Paulhus, 2014) as opposed to the Five Factor Machiavellianism Inventory – Super Short Form (Du et al., 2021) used in this study. There have been some criticisms of measures of Machiavellianism being too closely related to psychopathy (J. Miller et al., 2017, Miller et al., 2019), which Collison and colleagues (2018) tried to mitigate with the use of the five-factor model to explain Machiavellianism, creating a scale that more closely follows expert ratings of Machiavellianism (the 52-item FFMI). As well, Egan and colleagues (2015) used a sample mostly from the community and Maftai and colleagues (2022) used a sample from IT companies. It could be that this finding differs in a community sample compared to the university one used in this study. Speculatively, student and community samples may differ in whether Machiavellianism is significant due to careful planning levels. My student sample had a lower mean Machiavellianism score (36.5 out of 75) compared to Egan et al. (2015) and Maftai et al. (2022; 27 and 25 out of 45), meaning careful planning and the purposeful re-thinking of your beliefs of moral disengagement may be tied together, and why Machiavellianism was not significant in my sample of students.

The magnitude of the relationship between the dark traits and moral disengagement propensity was smaller than expected with moral disengagement measured as a trait. Correlations with moral disengagement propensity were only small (Machiavellianism) to moderate (narcissism, sadism, and psychopathy). As well, my Machiavellianism and sadism correlations were weaker than past literature and my narcissism correlation a bit stronger (Brugués & Caparrós, 2021; Clemente et al., 2019; Egan et al., 2015; Nocera et al., 2021; Tanrikulu & Erdur-Baker, 2019). Adding the dark traits to the regression predicting propensity to morally disengage only added 19% of the variance, and the slopes were not very strong. Bandura

has stated that moral disengagement is supposed to be a process (Bandura, 2018, as cited in Schaefer & Bouwmeester, 2020), and this could potentially hint at evidence for it.

### **Dark Personality Traits and Perpetration on Online Coercion Perceptions**

Research questions four and five examined how dark personality traits and past perpetration of image-based sexual abuse and sexting coercion influence how online coercion is perceived. I found that being a woman and not having perpetrated sexting coercion were predictive of rating the vignettes *more* coercive, and that being higher in moral disengagement propensity was predictive of rating the vignettes *less* coercive. Women viewing the vignettes as more coercive compared to men may reflect the differences in attitudes they hold and how this affects coerciveness perceptions (e.g., Emmers-Sommer & Allen, 1999), which was not assessed in this study. In a sample of adolescents, girls viewed sexual coercion (against boys or girls) as less acceptable than boys did (Glowacz et al., 2018). Women also tend to face harsher consequences than men if a sext is shared to others, such as attacks on their character (“promiscuous”) or victim blaming (e.g., Naezer & van Oosterhout, 2021; Zvi & Shechory Bitton, 2021), which may indicate a hesitancy to share a naked image possibly due to future dissemination. In a 2020 study by Clancy and colleagues, 28% of men and only 10% of women gave consent for their images to be shared with others. As S. Walker and colleagues (2013) noted with a sample of 15 – 20 years old’s: “[g]irls who send an image are viewed as responsible for the potential fallout that proceeds, even though boys may have coerced the girl to send the image in the first place” (p. 699). Sexting coercion perpetration being significant for coerciveness perceptions fits into the general aggression model I outlined earlier, where past perpetration may influence perceptions of similar situations (see Implications section for further discussion). Future research should explore if there are any cases where image-based sexual abuse

perpetration influences perceptions of coercion, or if the previously noted motivations for dissemination (e.g., “as a joke”; Clancy et al., 2019, 2020, 2021) are endorsed for the non-consensual taking of sexual images or threats of distribution. For moral disengagement, seeing as it is a mechanism by which people can engage in potentially harmful acts (Bandura, 1990; Bandura et al., 1996), it being related to perceptions of coerciveness is not surprising. Moral disengagement has been related to cyberbullying, cyberaggression, and workplace sexual harassment at work (e.g., Kowalski et al., 2014; Meter et al., 2021; Page et al., 2016; Robson & Witenberg, 2013). Moral disengagement has also been found to have some similar underpinnings as the Dark Tetrad, such as entitlement, lack of kindness and sincerity, and aggressive behaviour (Moshagen et al., 2018), which could explain why higher scores were associated with reduced coerciveness.

Unexpectedly, none of the dark personality traits were significant, hinting that they did not contribute unique variance when combined with gender, moral disengagement propensity, and sexting coercion perpetration. H. Miller et al. (2017) found that past in-person coercion usage and primary psychopathy predicted proclivity to use coercion in sexual vignette scenarios in female undergraduates; they used binary regressions, meaning that psychopathy and past coercion usage would have most likely been entered simultaneously, as opposed to sequentially like in this study. It could also be the case that moral disengagement propensity as assessed by the Propensity to Morally Disengage Scale (Moore et al., 2012) tapped into similar aspects of the dark personality traits. For example, Brewer et al. (2021) noted that primary psychopathy in women was associated with more victim blame, which is a component of moral disengagement. Clemente et al. (2019) noted that women tended to use the attribution of blame or dehumanization aspects of moral disengagement over men, and my sample is comprised of 72%

women. In a sample of men, moral disengagement may be less important, or the dark personality traits may contribute unique variance.

### **Relationship Type and Coercive Tactic on Coercion Perceptions**

Research question six assessed how the relationship status of individuals and coercive tactic used may change how online coercion is perceived. I found that both when not controlling and when controlling for gender, moral disengagement propensity, and SCIRS\_S perpetration, there was no statistically significant interaction between relationship type and tactic on ‘Coercion’. Main effects did not find a significant relationship of relationship type but there was a significant main effect for coercion tactic, with the hinting tactic being rated significantly less coercive than the threaten tactic. While not having an interaction or main effect of relationship type was unexpected, it is a welcome finding, possibly hinting that relationship type may not be significantly influencing how undergraduate students perceive this online coercion, but more research is needed. Past literature has noted that coercion in committed relationships has often been viewed as more acceptable or tolerable (e.g., Arriaga et al., 2016; Freetly & Kane, 1995), and that being in a more committed relationship has been associated with being less likely to leave when it becomes coercive (Young & Furman, 2013) but these studies measured in-person coercion. My scenarios examined online coercion, which removed the face-to-face aspect of the situation and may be why no effect of relationship type was found. Alternatively, there is a possibility that my vignettes were not salient enough with listing the relationship type (although I did have the attention check), or that relationship type has an impact on other coercion tactics (e.g., defection threat) not examined here. Future work should delve into this. The main effect for tactic was expected, given that threatening is a more overt tactic than hinting (e.g., Camilleri et al., 2009). It was positive to see that threatening in this context was uniformly viewed as more

coercive, given the close link this tactic had to non-consensual intimate image dissemination and sextortion (e.g., Humelnicu, 2017; Wittes et al., 2016).

### **Strengths and Limitations**

Strengths to this study included using comprehensive measures of sexting coercion and image-based sexual abuse, which asked about a range of behaviours that fall under those terms that participants may have not been aware of, as well as specifying about “at the time” of the relationship when collecting frequencies, which has not always been specified in past research. Also, utilizing a Machiavellianism scale that has been differentiated from psychopathy, being the first (to my knowledge) to examine sexting coercion perpetration and the Dark Tetrad, and utilizing a sample with a mean age that falls under the main age group that sexts (age was not restricted since this perpetration can happen at any age).

There were also some limitations with this study. Firstly, this was a convenience sample of undergraduate students with a mean age of 20 years old. While this fits my targeted demographic, it means results may not generalize to samples with predominately older ages. As well, with most participants identifying as a woman or as heterosexual, only men and women could be compared in analyses involving gender and, for sexual orientation, all participants that did not identify as heterosexual had to be binned into one category, losing the opportunity to examine each sexual orientation individually. Participants were also allowed to skip any questions they did not want to answer, which resulted in men being less likely to complete the Propensity to Morally Disengage Scale (Moore et al., 2012). This may be due to social desirability, since men often score higher than women on scales of moral disengagement (Bandura et al., 1996; 2001, as cited in Clemente et al., 2019; Clemente et al., 2019; Pina et al., 2021), and the nature of the scale questions. While the study was anonymous, these measures

were self-report, meaning there is a possibility of social desirability bias inflating or deflating scores and participants not reporting their perpetration for image-based sexual abuse or sexting coercion. Lastly, the Propensity to Morally Disengage scale (Moore et al., 2012) had poor internal consistency in this study ( $\alpha = .50$ ), which calls into question the results from the measure. The Five Factor Machiavellianism Inventory – Super-Short Form (Du et al., 2021) also had poor internal consistency in this study ( $\alpha = .55$ ), but this may be due to the nature of the scale (e.g., Sharpe et al., 2021) and highlights the importance of examining the subscales.

### **Implications and Future Directions**

This study has implications regarding who may be more likely to perpetrate image-based sexual abuse or sexting coercion and what factors may influence perceptions of online coercion. This study also showed that the general aggression model appears to be a valid theory to explain image-based sexual abuse and sexting coercion perpetration, as well as long term outcomes, over theories that only examine one aspect (e.g., dark trait theory, moral disengagement theory). At the same time, there are other models that could have been used to link the dark personality traits and antisocial behaviour. I found that person-specific inputs (e.g., gender, dark traits, moral disengagement), influenced someone's likelihood of perpetration, which has implications for who prevention programs should try to target or which perceptions should be changed. This could include education against victim blaming or myths against image-based sexual abuse and sexting coercion with follow-ups to ascertain if the education is having an effect, or teaching university students that these behaviours have very real harms to victim-survivors; images shared online without consent can be very difficult to completely remove from the Internet (Henry & Flynn, 2019). I also found that past sexting coercion perpetration can then alter how online coercive behaviours are perceived. This has the potential to then alter person-specific and

situation-specific inputs, such as someone's attitudes or values, or in-person sexual coercion perpetration (shown by the arrow going back around in Figure 1). Knowing which factors and how they interact with one another in the general aggression model can give universities and policymakers insight into which factors or areas may need to be targeted first.

As well, people may be moving away from viewing coercion differently in various relationship types which is a good sign and recognizing that threatening someone to try to gain more naked images is not okay. While more subtle tactics to gain images may appear not as bad, there is still the risk of dissemination in the future (e.g., S. Walker et al., 2013; Van Ouytsel et al., 2017), and people need to be aware that this image-based sexual abuse and sexting coercion is not confined to one type of relationship, as shown in this study. Schools, institutions, and governments must keep educating people to recognize the signs of coercion, in both adolescents and young adults. Sexting can be a positive experience (Burkett, 2015; Currin et al., 2020; Roberts & Ravn, 2019) when done consensually. Henry et al. (2019) found that men downplayed the harmful effects that dissemination had on victim/survivors, indicating a possible focus for education programs to target men. As well, people must be informed as to where to report if their intimate image is disseminated, and that perpetrating that behaviour is illegal. Karasavva and Forth (2021) found that 46% of their university sample were not aware this sharing is illegal. Google and social media platforms like Facebook and Twitter have policies in place or forms for you to report if your non-consensual image was shared. Victim-survivors can also report to police, but the criminal justice process can be lengthy and there appears to be a need to educate law officials on the harms of image dissemination and reduce myths they may hold about this online abuse (Powell & Henry, 2018; Wolak & Finkelhor, 2016; Zvi & Shechory Bitton, 2020).

Victim-survivors experience enough harm from the image dissemination, they do not need to feel added harm in people they are supposed to be able to trust.

Future research should look at the mediation or moderation of these perpetration variables and coercion perceptions with gender, dark traits, and moral disengagement, to tease apart the influence of these variables on each other. Alternatively, future work should examine perpetration variables and coercion perceptions using multiple psychopathy measures; studies have used a variety of measures with different findings. Studies should also examine the rate that coerced sexual images become non-consensually distributed in various relationship types.

Situation-specific inputs of the general aggression model should be examined in future research, including provocation (e.g., did something happen to them or did they perceive something to have happened, that influenced their decision to perpetrate), past in-person sexual coercion perpetration (since there has been a link between online and in-person coercion perpetration; Kernsmith et al., 2018), and the perceived anonymity that being online may give (pertinent to image-based sexual abuse). More qualitative data is also needed to explore the reasons for perpetrating these behaviours beyond what quantitative scales can tell us, focusing on the routes and proximal processes of the general aggression model and figuring out why they decided to perpetrate these behaviours, especially given the impact that victimization can have on victim-survivors (e.g., Bates, 2017; Flynn et al., 2016). To that end, future work should try to measure moral disengagement of image-based sexual abuse and sexting coercion as a process instead of a trait, altering where it would be placed in the context of the general aggression model (in the internal states and proximal process sections instead of a person-specific input). This could be done using a scale specific to sexting coercion or image-based sexual abuse, such as the new Moral Disengagement in Image-based Sexual Abuse scale (Pina et al., 2021), which

assesses moral disengagement in that specific context instead of generally. This would help researchers understand how people justify this perpetration. Schaefer and Bouwmeester (2020) note that scale specificity is needed to measure process moral disengagement; moral disengagement is happening in these instances, not as a general behaviour. They also go one step further, arguing that moral disengagement should be examined more broadly than the current definition with eight mechanisms allows, with all points falling on various points of “reconstruing morality and reconstruing agency” (p. 533; see Schaefer & Bouwmeester, 2020 for a visual representation). This would help assess if there are other ways that someone may justify their behaviour. Proclivity for future perpetration of image-based sexual abuse and sexting coercion should also be examined as an outcome factor in the general aggression model, especially if past perpetration possibly increases future proclivity. Longitudinal work on this would be the most rigorous for causal inferences. Lastly, this is not an exhaustive list and there maybe other factors important for this general aggression model to explain image-based sexual abuse or sexting coercion that should be looked into (e.g., age, depression, anxiety, substance use).

### **Conclusion**

This study aimed to shed light on various factors that may influence image-based sexual abuse and sexting coercion perpetration, as well as how those factors and past perpetration may influence perceptions of online coercion when relationship type and tactic were varied. Results indicated that psychopathy, sadism, and narcissism predicted image-based sexual abuse perpetration, while gender and narcissism predicted sexting coercion perpetration. For moral disengagement propensity, psychopathy, sadism, and narcissism were found to predict it. Gender, moral disengagement propensity, and sexting coercion perpetration were found to

predict how coercive the vignettes were perceived overall, and only altering the coercion tactic (threat versus hint) significantly altered how coercive the vignettes were perceived. Future work exploring the moderation or mediation of these variables is needed, as well as exploring the situation-specific inputs, routes, and proximal processes of the general aggression model as an avenue to explain the perpetration of image-based sexual abuse and sexting coercion.

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## Appendix A Demographic Questionnaire

Please provide the following information:

Note: You may skip any questions you do not wish to answer.

1. Age (in years): \_\_\_\_
  
2. What is your gender identity?
  - a. Man
  - b. Woman
  - c. Trans man
  - d. Trans woman
  - e. Non-binary
  - f. Genderfluid
  - g. Two-spirit
  - h. Other: \_\_\_\_\_
  
3. What is your sexual orientation?
  - a. Heterosexual
  - b. Homosexual
  - c. Bisexual
  - d. Asexual
  - e. Pansexual
  - f. Other: \_\_\_\_
  
4. What is your racial/ethnic background?
  - a. Indigenous Canadian/Native Canadian/ First Nations
  - b. Asian
  - c. Black/African-Canadian
  - d. East Indian
  - e. Hispanic/Latinx
  - f. Middle Eastern
  - g. White/Caucasian
  - h. Other:

## Appendix B

### Comprehensive Assessment of Sadistic Tendencies

Instructions: Rate your agreement with each statement using a 5-point scale. You may skip any question you do not want to answer.

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

#### Direct - Verbal

1. I was purposely mean to some people in high school.
2. I enjoy making jokes at the expense of others.
3. I have purposely tricked someone and laughed when they looked foolish.
4. When making fun of someone, it is especially amusing if they realize what I'm doing.
5. Perhaps I shouldn't have, but I never got tired of mocking certain classmates.
6. I would never purposely humiliate someone. (R)

#### Direct - Physical

1. I enjoy physically hurting people.
2. I enjoy tormenting people.
3. I have the right to push certain people around.
4. I have dominated others using fear.
5. I enjoy hurting my partner during sex (or pretending to).

#### Vicarious

1. In video games, I like the realistic blood spurts.
2. I love to watch YouTube clips of people fighting.
3. I enjoy watching cage fighting (or MMA), where there is no escape.
4. I sometimes replay my favorite scenes from gory slasher films.
5. There's way too much violence in sports. (R)
6. I enjoy playing the villain in games and torturing other characters.
7. In professional car-racing, it's the accidents that I enjoy most

#### Scoring Key:

Total score: Sum 18 items

Subscales: sum subscale items

(R) indicates the item should be reverse-coded before being summed

## Appendix C

### Five Factor Machiavellianism Inventory – Super-Short Form

The following statements deal with how you think, feel, and act. Please read each item carefully and choose the option that best corresponds to your agreement or disagreement. If you **disagree strongly** click **1**, if you **disagree somewhat** click **2**, if you **neither agree nor disagree** click **3**, if you **agree somewhat** click **4**, and if you **strongly agree** click **5**. There are no right or wrong answers, and you need not be an expert to complete this questionnaire.

1	2	3	4	5
Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

1. I think it is important to be charitable to others
2. I am not an ambitious person.
3. I am better than others.
4. I work hard to pursue my goals.
5. "Act first, think later," describes me well.
6. People would say that I have trouble standing up for myself.
7. Being honest all of the time won't lead to success.
8. I am often unsure of how to proceed in my life.
9. I tend to jump right into things without thinking very far ahead.
10. I'm not a particularly sympathetic person.
11. I am very sure of myself.
12. I tend to assume the best about people.
13. I prefer to be spontaneous rather than planning everything out.
14. I am not easily flustered.
15. I never seem to be able to get organized.

#### Scoring Key:

Antagonism: 1r, 3, 7, 10, 12r

Agency: 2r, 4, 6r, 8r, 11, 14

Planning: 5r, 9r, 13r, 15r

Total Machiavellianism: 1r, 2r, 3, 4,  $(5r + 13r)/2$ , 6r, 7, 8r,  $(9r + 15r)/2$ , 10, 11, 12r, 14

(r) indicates the item should be reverse-coded before being summed

## Appendix D

### Five Factor Narcissism Inventory – Super-Short Form

The following statements deal with how you think, feel, and act. Please read each item carefully and choose the option that best corresponds to your agreement or disagreement. If you **disagree strongly** click **1**, if you **disagree somewhat** click **2**, if you **neither agree nor disagree** click **3**, if you **agree somewhat** click **4**, and if you **strongly agree** click **5**. There are no right or wrong answers, and you need not be an expert to complete this questionnaire.

1	2	3	4	5
Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

1. When someone does something nice for me, I wonder what they want from me.
2. When people judge me, I just don't care.
3. I don't worry about others' needs.
4. I'm pretty good at manipulating people.
5. I hate being criticized so much that I can't control my temper when it happens.
6. I will try almost anything to get my "thrills".
7. I am comfortable taking on positions of authority.
8. I often fantasize about having lots of success and power.
9. I aspire for greatness.
10. I do not waste my time hanging out with people who are beneath me.
11. It may seem unfair, but I deserve extra (i.e., attention, privileges, rewards).
12. I feel ashamed when people judge me.
13. I love to entertain people.
14. I'm willing to exploit others to further my own goals.
15. I wish I didn't care so much about what others think of me.

#### Scoring Key:

**Total FFNI** (corresponds to the conception of narcissism inherent in the DSM conception of Narcissistic Personality Disorder): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

Two conceptually-driven composites can also be created—Vulnerable and Grandiose.

**Vulnerable narcissism:** 5, 12, 15

**Grandiose narcissism:** 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14.

Factor analyses indicate that these 15 items are underlain by three factors:

**Antagonism**= 1, 3, 4, 5, 6, 10, 11, 14

**Neuroticism**= 2, 12, 15

**Agentic Extraversion**= 7, 8, 9, 13

(r) indicates the item should be reverse-coded before being summed

## Appendix E

### Propensity to Morally Disengage Scale

Please indicate the extent to which you agree or disagree with the statements below. You may skip any questions you do not want to answer.

Items measured on a 7-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*.

#### *Moral Justification*

**It is not okay to spread rumors to defend those you care about.\* (R)**

It is not alright to lie to keep your friends out of trouble.\* (R)

Playing dirty is sometimes necessary in order to achieve noble ends.

#### *Euphemistic Labelling*

**Taking something without the owner's permission is okay as long as you're just borrowing it.\***

It's not okay to gloss over certain facts to make your point.\* (R)

When you're negotiating for something you want, not telling the whole story is just part of the game.

#### *Advantageous Comparison*

**Considering the ways people grossly misrepresent themselves, it's hardly a sin to inflate your own credentials a bit.\***

Compared to other illegal things people do, taking something small from a store without paying for it isn't worth worrying about.\*

Damaging property is still a big deal even when you consider that others are assaulting people. (R)

#### *Displacement of Responsibility*

**People should be held accountable for doing questionable things when they were just doing what an authority figure told them to do.\* (R)**

People cannot be blamed for misbehaving if their friends pressured them to do it.\*

You can't blame people for breaking the rules if that's what they were taught to do by their leaders.

#### *Diffusion of Responsibility*

**People can't be blamed for doing things that are technically wrong when all their friends are doing it too.\***

It's not okay to tell a lie even if the group agrees that it's the best way to handle the situation.\* (R)

In contexts where everyone cheats, there's no reason not to.

#### *Distortion of Consequences*

**Taking personal credit for ideas that were not your own is a big deal.\* (R)**

Walking away from a store with some extra change doesn't cause any harm\*  
It is OK to tell small lies when negotiating because no one gets hurt.

*Dehumanization*

**Some people have to be treated roughly because they lack feelings that can be hurt.\***

It's okay to treat badly somebody who behaves like scum.\*

Violent criminals do deserve to be treated like normal human beings. (R)

Attribution of Blame

**People who get mistreated have usually done something to bring it on themselves\***

If a business makes a billing mistake in your favor, it's okay not to tell them about it because it was their fault.\*

If people have their privacy violated, it's probably because they have not taken adequate precautions to protect it.

*Items in bold comprise the final 8-item measure. Items marked with \* comprise the 16-item measure.*

(R) indicates the item is reverse-scored for this study

**Scoring Key:**

Total: Reverse code the indicated items, then sum the total number of items used

Subscale scores: Reverse code the indicated items, then sum the total number of items used

## Appendix F

### Image-Based Sexual Abuse Perpetration Scale

Instruction: Answer with a yes or no the following questions. You may skip any questions you do not want to answer.

Have you ever (since you were 16) distributed without consent a picture of someone else:

1. Where they are partially clothed or semi-nude Yes No
2. Where their breasts, including their nipples, are visible Yes No
3. Where they are completely nude Yes No
4. Where their genitals are visible Yes No
5. Where they are engaged in a sexual act Yes No
6. Where they are showering, bathing, or toileting Yes No
7. Which is up their skirt (e.g., 'up-skirting') Yes No
8. Which is of their cleavage (e.g., 'downblousing') Yes No

Have you ever (since you were 16) threatened to distribute without consent a picture of someone else:

1. Where they are partially clothed or semi-nude Yes No
2. Where their breasts, including their nipples, are visible Yes No
3. Where they are completely nude Yes No
4. Where their genitals are visible Yes No
5. Where they are engaged in a sexual act Yes No
6. Where they are showering, bathing, or toileting Yes No
7. Which is up their skirt (e.g., 'up-skirting') Yes No
8. Which is of their cleavage (e.g., 'downblousing') Yes No

1. What was the gender of the person(s) you threatened to distribute or distributed their nude or sexual image without their consent?

- a. Female
- b. Male
- c. Transgender
- d. Non-binary
- e. Gender Fluid
- f. Two-spirit
- g. Don't know
- h. Other:

2. At that time, what was your relationship with the person/people in the nude or sexual image when you threatened to distribute/ or distributed their image?

- a. One night stand
- b. Booty call

- c. Friend with benefits
- d. Casual dating partner
- e. Committed relationship partner
- f. Cheating relationship partner
- g. Friend (known face-to-face)
- h. Friend (known online only)
- i. Family
- j. Acquaintance
- k. Stranger
- l. Don't know
- m. Other \_\_\_\_\_

**Scoring Key:**

Threat: Sum the yes responses for the 8 items under the threatened to disseminate question

Disseminate: Sum the yes responses for the 8 items under the disseminated question

## Appendix G

### Sexual Coercion in Intimate Relationships Scale - Perpetration

Sexuality is an important part of romantic relationships and can sometimes be a source of conflict. Your honest responses to the following questions will contribute profoundly to what is known about sexuality in romantic relationships and may help couples improve the sexual aspects of their relationships. We appreciate that some of the questions may be uncomfortable for you to answer, but keep in mind that your responses will remain anonymous. You may skip any questions you do not want to answer.

Below is a list of acts related to **sexting** that can occur in a romantic relationship.

Please think of your current relationship or most recent past romantic relationship. Please indicate HOW OFTEN any of these have happened with that partner in the last 12 months (for a current romantic relationship) or during the last 12 months of the relationship (for a past romantic relationship).

What type of relationship was this?

- a. one night stand
- b. booty call
- c. friend with benefits
- d. casual dating partner
- e. committed relationship partner
- f. cheating relationship partner
- g. other (please specify)

If you have never been in a romantic relationship, please click this response to skip the questionnaire below:

- a. I have never been in a romantic relationship

What was the gender of the person you were in this relationship with?

- a. Female
- b. Male
- c. Transgender
- d. Non-binary
- e. Gender Fluid
- f. Two-spirit
- g. Don't know
- h. Other:

0 = Act *did NOT* occur in the past 12 months

1 = Act occurred *1 time* in the past 12 months

2 = Act occurred *2 times* in the past 12 months

3 = Act occurred *3 to 5 times* in the past 12 months

4 = Act occurred *6 to 10 times* in the past 12 months

5 = Act occurred *11 OR MORE times* in the past 12 months

1. I *hinted* that I would withhold benefits that my partner depends on if they did not send me a sexually-explicit picture or video.
2. I *threatened* to withhold benefits that my partner depends on if they did not send me a sexually-explicit picture or video.
3. I withheld benefits that my partner depends on to get them to send me a sexually-explicit picture or video.
4. I *hinted* that I would give my partner gifts or other benefits if they sent me a sexually-explicit picture or video.
5. I gave my partner gifts or other benefits so that they would feel obligated to send me a sexually-explicit picture or video.
6. I reminded my partner of gifts or other benefits I gave them so that my partner would feel obligated to send me a sexually-explicit picture or video.
7. I persisted in asking my partner to send me a sexually-explicit picture or video, even though I knew that they did not want to.
8. I pressured my partner to send me a sexually-explicit picture or video against their will.
10. I *threatened* to physically force my partner to take a sexually-explicit picture or video.
12. I made my partner feel obligated to send me a sexually-explicit picture or video.
13. I *hinted* that I would look at sexually-explicit pictures or videos of another person (e.g., porn) if my partner did not send me a sexually-explicit picture or video.
14. I *threatened* to look at sexually-explicit pictures or videos of another person (e.g., porn) if my partner did not send me a sexually-explicit picture or video.
15. I told my partner that other couples send sexually-explicit pictures or videos more than we do, to make my partner feel like they should send me a sexually-explicit picture or video.
16. I *hinted* that I might pursue a long-term relationship with another person if my partner did not send me a sexually-explicit picture or video.
17. I *threatened* to pursue a long-term relationship with another person if my partner did not send me a sexually-explicit picture or video.
18. I *hinted* that if my partner were truly committed to me they would send me a sexually-explicit picture or video.
19. I *told* my partner that if they were truly committed to me they would send me a sexually-explicit picture or video.
20. I *hinted* that if my partner loved me they would send me a sexually-explicit picture or video.
21. I *told* my partner that if they loved me they would send me a sexually-explicit picture or video.
22. I *threatened* violence against my partner if they did not send me a sexually-explicit picture or video.
23. I *threatened* violence against someone or something my partner cares about if they did not send me a sexually-explicit picture or video.
24. I *hinted* that other people were interested in a relationship with me, so that my partner would send me a sexually-explicit picture or video.
25. I *told* my partner that other people were interested in a relationship with me, so that my partner would send me a sexually-explicit picture or video.
26. I *hinted* that other people were interested in having sex with me, so that my partner would send me a sexually-explicit picture or video.

27. I *told* my partner that other people were interested in having sex with me, so that my partner would send me a sexually-explicit picture or video.
28. I *hinted* that other people were willing to send me sexually-explicit pictures or videos, so that my partner would send me a sexually-explicit picture or video.
29. I *told* my partner that other people were willing to send me sexually-explicit pictures or videos, so that my partner would send me a sexually-explicit picture or video.
30. I *hinted* that it was my partner's obligation or duty to send me a sexually-explicit picture or video.
31. I *told* my partner that it was their obligation or duty to send me a sexually-explicit picture or video.
32. I *hinted* that my partner was cheating on me, in an effort to get them to send me a sexually-explicit picture or video.
33. I *accused* my partner of cheating on me, in an effort to get them to send me a sexually-explicit picture or video.
34. My partner sent me a sexually-explicit picture or video, even though they did not want to.

\*Items 9 and 11 were removed for this study

**Scoring Key:**

Total score: sum all 34 items

Resource manipulation/violence: 1 + 2 + 3 + 4 + 5 + 6 + 9 + 10 + 11 + 17 + 22 + 23 + 31 + 32 + 33

Commitment manipulation: 7 + 8 + 12 + 15 + 18 + 19 + 20 + 21 + 30 + 34

Defection threat: 13 + 14 + 16 + 24 + 25 + 26 + 27 + 28 + 29

## Appendix H

### Vignettes

Z and B are both in their early 20's and are strangers who recently matched on a dating application. They were messaging one another when Z started hinting that they wanted a naked image of B, since B had previously sent Z one. B said no, they didn't want to. Z just kept hinting that it would be nice if B sent another nude. Eventually B gave in and sent Z a naked image of themselves.

Relationship type: Strangers, recently matched  
Coercion tactic: Hinting

Z and B are both in their early 20's and are casually dating. They were messaging one another when Z started hinting that they wanted a naked image of B, since B had previously sent Z one. B said no, they didn't want to. Z just kept hinting that it would be nice if B sent another nude. Eventually B gave in and sent Z a naked image of themselves.

Relationship type: Casually dating  
Coercion tactic: Hinting

Z and B are both in their early 20's and in a committed relationship. They were messaging one another when Z started hinting that they wanted a naked image of B, since B had previously sent Z one. B said no, they didn't want to. Z just kept hinting that it would be nice if B sent another nude. Eventually B gave in and sent Z a naked image of themselves.

Relationship type: Committed relationship  
Coercion tactic: Hinting

Z and B are both in their early 20's and are strangers who recently matched on a dating application. They were messaging one another when Z started to threaten B for a naked image, since B had previously sent Z one. B said no, they didn't want to. Z threatened to release the sexual image B had already sent if B didn't send another. Eventually B gave in and sent Z a naked image of themselves.

Relationship type: Strangers, recently matched  
Coercion tactic: Threatening

Z and B are both in their early 20's and are casually dating. They were messaging one another when Z started to threaten B for a naked image, since B had previously sent Z one. B said no, they didn't want to. Z threatened to release the sexual image B had already sent if B didn't send another. Eventually B gave in and sent Z a naked image of themselves.

Relationship type: Casually dating

Coercion tactic: Threatening

Z and B are both in their early 20's and in a committed relationship. They were messaging one another when Z started to threaten B for a naked image, since B had previously sent Z one. B said no, they didn't want to. Z threatened to release the sexual image B had already sent if B didn't send another. Eventually B gave in and sent Z a naked image of themselves.

Relationship type: Committed relationship

Coercion tactic: Threatening

## Appendix I

### Perceptions Questionnaire

Please answer these questions based upon the scenario you just read about. You may skip any questions you do not want to answer.

#### Coercion

1. How appropriate was Z's behaviour in the scenario? \*R  
1 (Not at all appropriate) 4 (moderately appropriate) 7 (absolutely appropriate)
2. How acceptable was Z's behaviour in the scenario? \*R  
1 (Not at all acceptable) 4 (moderately acceptable) 7 (perfectly acceptable)
3. How serious was Z's behaviour in the scenario?  
1 (not at all serious) 4 (moderately serious) 7 (extremely serious)
4. How likely do you think this behaviour is to escalate to violence?  
1 (Not at all likely) 4 (moderately likely) 7 (extremely likely)
5. How coercive did you find Z in this interaction to be?  
1 (not at all coercive) 4 (moderately coercive) 7 (very coercive)
6. What degree of pressure do you think B felt to "give in" to sending a naked image?  
1 (not at all pressured) 4 (moderately pressured) 7 (very pressured)
7. Please rate the degree to which you feel this sexual interaction was consensual? \*R  
1 (not at all consensual) 4 (moderately consensual) 7 (very consensual)
8. Was it fair for Z to have been expecting B to send another naked image? \*R  
1 (not at all fair) 4 (moderately fair) 7 (very fair)

#### Consent

9. Did B consent to sending a naked image of themselves?  
Yes No

#### Face-to-face

10. How acceptable would Z's behaviour be if this were face-to-face? \*R  
1 (not at all acceptable) 4 (moderately acceptable) 7 (perfectly acceptable)
11. How serious would Z's behaviour be if this were face-to-face?  
1 (not at all serious) 4 (moderately serious) 7 (extremely serious)

12. How coercive would Z's behaviour be if this were face-to-face?

1 (not at all coercive) 4 (moderately coercive) 7 (very coercive)

13. If this were face-to-face, how likely would this behaviour be to escalate to violence?

1 (extremely unlikely) 4 (moderately likely) 7 (extremely likely)

**YES/NO Face-to-face**

14. Is the Z's behaviour more acceptable because it is virtual and not face-to-face?

Yes No

Higher score = more coercive

\*R = reverse coded

## **Appendix J**

### **Attention Checks**

#### **Attention Checks**

1. For this question, select 5
2. For this question, select 2
3. For this question, select 'Act occurred 6 to 10 times'

#### **Vignette Attention Checks**

1. What was the relationship of the individuals in the scenario you read about?
  - a. Strangers, recently matched
  - b. Casually dating
  - c. Committed relationship
2. What coercion tactic was used in the scenario you read about?
  - a. Threatening
  - b. Hinting