Bashful Behaviours: The Association Between Perceived Vulnerability and the Dark
Tetrad Personality Traits

By

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Abstract

Research has demonstrated that some personality traits (e.g., submissiveness) and behavioural cues (e.g., gait) may act as indicators of past victimization and/or vulnerability to future victimization (e.g., Grayson & Stein, 1981; Kelley et al., 2016), with those high on the dark traits, specifically psychopathy, demonstrating an adeptness in identifying previously victimized individuals (e.g., Book et al., 2013; Denardo et al., 2018). Based on this, the current research sought to examine how nonverbal cues other than gait relate to self-perceptions of vulnerability (Study 1) as well as how personality constructs, like the Dark Tetrad (i.e., Machiavellianism, narcissism, psychopathy, sadism), influence the detection and assessment of vulnerability within others (Study 2). Results from Study 1 suggest that women lacking in assertiveness are more likely to perceive themselves as vulnerable and engage in specific nonverbal behaviours (e.g., self-touch), while Study 2 indicates that although the dark traits do not appear to have an enhanced ability to detect self-perceived vulnerability in others, they are more likely than those scoring low on the dark traits to indicate relying on intuition or non-behavioural cues (e.g., physical appearance) when assessing vulnerability. Alternatively, those high in honesty-humility personality traits noted relying on behavioural cues including facial expressions, emotional appearance, and posture. Taken together, this research suggests that personality traits and nonverbal behaviours are relevant and important indicators of vulnerability.

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Dedication

I would like to dedicate this thesis to the survivors of physical, sexual, and emotional abuse, as well as those who have been victimized by psychopathic, narcissistic, Machiavellian or sadistic individuals. My goal with this research is to help identify mechanisms that may aid in the reduction of victimization, which in turn, I hope, will assist in the support of survivors.

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Bashful Behaviours: The Association Between Perceived Vulnerability and the Dark
Tetrad Personality Traits

Every day, we are subject to interactions in which we actively engage in nonverbal decoding to help us navigate our social worlds. Indeed, some have argued that up to 70% of our social interactions are interpretable via nonverbal behaviours (e.g., Burgoon et al., 1996). As such, nonverbal evaluations not only help us analyze our environment for threats to our safety and security but can also act as one of the primary mechanisms of judgement in the decision to form bonds and relationships. For example, the ability to determine what emotion people are feeling and whether those emotions are genuine often provides us with our first indicator of trustworthiness or authenticity. In fact, nonverbal cues are so important within the process of establishing relationships that some studies have demonstrated that within online dating situations, evaluations of potential partners were more favorable when nonverbal cues (i.e., use of avatars in conversation) were present during the conversation (Kotlyar & Ariely, 2013). This is understandable considering that people are less likely to feel uncertainty towards another when more information about that individual is available (Kotlyar & Ariely, 2013).

Unfortunately, these skills may also be employed by some in an attempt to identify the most suitable candidates for potentially dangerous and/or criminal situations (e.g., assault, kidnapping, theft, scams). Research has corroborated this notion as nonverbal cues (e.g., gait, bodily movements) are often cited as being a fundamental tactic during the appraisal of prospective victims (Blaskovits & Bennell, 2019; Richards et al., 1991; Stevens, 1994). Further, as personality traits are not explicitly evident, but rather interpreted via nonverbal cues such as emotional displays, eye contact, and body

movements and gestures (Argyle, 1975; Simpson et al., 1993), the proper assessment of nonverbal cues can help in the prediction of affective state and/or future behaviour (Berger & Calabrese, 1975). It would make sense then, that victimizers and potential victims alike would display specific and distinct personality characteristics that could bolster potential roles and/or behaviours within social interactions.

Dark personality traits (i.e., Machiavellianism, narcissism, psychopathy, sadism) are often associated with socially malicious behaviours (Paulhus & Williams, 2002), and in particular, social deviance has been argued to be an integral component of psychopathy (Hare & Neumann, 2005; Lynam & Miller, 2012). Psychopathic individuals are often callous, show a lack of remorse, and demonstrate exceptional deception and manipulation tactics (Babiak & Hare, 2006; Baughman et al., 2014; Dutton, 2012; Grieve & Mahar, 2010; Paulhus, Hemphill, & Hare, 2016; Jonason et al., 2014; Seto et al., 1997). Due to these traits, it's conceivable that psychopaths may show enhanced abilities at identifying vulnerabilities within others for the purpose of exploitation (Book et al., 2007).

Therefore, this research examined if individuals with psychopathic, sadistic, Machiavellian, and/or narcissistic traits are adept at identifying vulnerabilities in others as well as how nonverbal behaviours are perceived to be utilized during this process.

Personality

Over the years, there has been debate as to what traits are fundamental to personality and temperament, and which systems best classify these traits (Costa & McCrae, 1992; Zuckerman, 1992). Proponents of the Five Factor Model (FFM) have argued that this model provides the most accurate encompassment of personality (Costa & McCrae, 1992; Digman, 1990). Developed lexically via the methods in which people

describe themselves, the FFM is one of the most widely used and studied models of personality (Costa & McCrae, 1995; John & Srivastava, 1999; McCrae & John, 1992; Saucier & Goldberg, 1996). The FFM comprises five fundamental and unique traits, specifically, openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism, with each trait breaking down into sub-traits, or facets (see Table 1). The five traits within the FFM are considered to be stable over time (Halverson et al., 2003; McCrae & Costa, 1990; Shiner, 2009), heritable (McCrae & Costa, 2003) and cross-culturally applicable (Ispas et al., 2014; Livesley, 2001; Yoon et al., 2002).

Table 1*Dimensions and Facets for the Five Factor Model*

Dimension	Facet Scales
Neuroticism	<ol style="list-style-type: none"> 1. Anxiety 2. Angry hostility 3. Depression 4. Self-consciousness 5. Impulsiveness 6. Vulnerability
Extraversion	<ol style="list-style-type: none"> 1. Warmth 2. Gregariousness 3. Assertiveness 4. Activity 5. Excitement seeking 6. Positive emotions
Openness	<ol style="list-style-type: none"> 1. Fantasy 2. Aesthetics 3. Feelings 4. Actions 5. Ideas 6. Values
Agreeableness	<ol style="list-style-type: none"> 1. Trust 2. Straightforwardness 3. Altruism 4. Compliance 5. Modesty 6. Tender-mindedness
Conscientiousness	<ol style="list-style-type: none"> 1. Competence 2. Order 3. Dutifulness 4. Achievement striving 5. Self-discipline 6. Deliberation

Beyond the construct of general personality, research has indicated that the FFM can account for traits present within abnormal personalities (e.g., personality disorders; O'Connor, 2005; Samuel et al., 2010), by means of the severity of each trait present, and the combination in which they are expressed (O'Connor & Dyce, 2001; Widiger, 2000). Recent investigation into the domains of personality has revealed a sixth distinct dimension, honesty-humility (Ashton et al., 2004), which has resulted in an alternative model, the Honesty-humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, and Openness to experience (HEXACO; see Table 2). Analogously to its predecessors, the honesty-humility dimension includes four facets, namely, sincerity, fairness, greed avoidance, and modesty (Lee & Ashton, 2018). Research has indicated that the HEXACO and FFM dimensions of extraversion, conscientiousness and openness to experience have the strongest positive correlations (i.e., r s ranging from .66 to .74, .58 to .75, and .71 to .80, respectively) as the descriptions/constructs in both models are similar (Ashton & Lee, 2009; Ashton et al., 2014). The HEXACOs agreeableness and emotionality and the FFMs agreeableness and neuroticism have also shown positive correlations, although to a lesser degree (i.e., r s ranging from .51 to .57, and .40 to .55, respectively), in part due to the differing descriptions of the dimensions between the two models (Ashton & Lee, 2009; Ashton et al., 2014). Finally, the HEXACOs honesty-humility dimension has shown modest correlations with the FFMs agreeableness, ranging from .28 to .41 (Ashton & Lee, 2009; Ashton et al., 2014).

Table 2*Dimensions and Facets for the HEXACO*

Dimension	Facet Scales
Honesty-humility	1. Sincerity 2. Fairness 3. Greed-avoidance 4. Modesty
Emotionality	5. Fearfulness 6. Anxiety 7. Dependence 8. Sentimentality
eXtraversion	9. Social self-esteem 10. Social Boldness 11. Sociability 12. Liveliness
Agreeableness	13. Forgiveness 14. Gentleness 15. Flexibility 16. Patience
Conscientiousness	17. Organization 18. Diligence 19. Perfectionism 20. Prudence
Openness to Experience	21. Aesthetic Appreciation 22. Inquisitiveness 23. Creativity 24. Unconventionality

Note. Adapted from “The HEXACO-60: A Short Measure of the Major Dimensions of Personality,” by M. C. Ashton, & K. Lee, 2009. *Journal of Personality Assessment*, 91, 340-345.

There is a growing body of literature demonstrating that “dark” personality traits (i.e., sadism, Machiavellianism, narcissism, psychopathy; Paulhus & Williams, 2002), are

correlated with the HEXACO model of personality (Johnson et al., 2019; Lee & Ashton, 2005), with some arguing that the HEXACO Personality Inventory (HEXACO-PI; Lee & Ashton, 2004) is the most accurate description of the dark personality traits (e.g., Book et al., 2015; Plouffe et al., 2019). Book et al. (2016) identified the HEXACO-PI as the most predictive measure for the Dark Tetrad (i.e., sadism, Machiavellianism, narcissism, psychopathy), over the Big Five Inventory (John & Srivastava, 1999), the Self-Report Psychopathy Scale-III (Paulhus, Hemphill, & Hare, 2016), and the Narcissistic Personality Inventory (Raskin & Hall, 1979). Specifically, the researchers identified that the “core” of the Dark Tetrad appears to correlate with low levels of agreeableness, honesty-humility, conscientiousness, and emotionality (Book et al., 2016).

Dark Personality Traits

The Dark Triad, comprised of subclinical levels of its three trademark “dark” personality traits, Machiavellianism, psychopathy, and narcissism, is often associated with delinquency, malevolent, and/or socially exploitive behaviours (Jonason & Webster, 2012; Paulhus & Williams, 2002; Peeters et al., 2010; Stickle et al., 2009; Wai & Tiliopoulos, 2012). In addition to these behaviours, Machiavellianism, referred to as the ‘manipulative’ personality includes low morality, cynicism and strategic planning (Christie & Geis, 1970; Jones & Paulhus, 2014), while psychopathy has been closely linked to manipulation, impulsivity, and affective deficits (e.g., lack of empathy, callousness; Jones & Paulhus, 2011). Despite psychopathy and Machiavellianism sharing similar characteristics, the key distinguishing factor between the two lies within the psychopath’s impulsivity versus the Machiavellians careful planning (Jones & Paulhus, 2011, 2014). Finally, narcissism manifests in heightened levels of grandiosity,

impulsivity, and analogously to the other dark traits, manipulative behaviours (Jones & Paulhus, 2011; Pincus & Lukowitski, 2010).

Over the past decade, research into the Dark Triad has been plentiful, demonstrating a relationship between the dark traits and risk-taking or sensation seeking behaviours (e.g., Crysel et al., 2012), bullying (e.g., Baughman, et al., 2012; Peeters et al., 2010), psychological abuse (e.g., Carton & Egan, 2017, Wisse & Sleenbos, 2016), aggression (e.g., Bushman & Baumeister, 1998; Jones & Paulhus, 2010; Jones & Niera, 2015; Paulhus & Williams, 2002), and violence (e.g., Carton & Egan, 2017; Pailing et al., 2014). In a study assessing juvenile delinquents in the community, Chabrol and colleagues (2009) found that psychopathic traits, as measured by the callous-unemotional dimension on the Youth Psychopathic Traits Inventory (Andershed et al., 2002), and sadistic traits were the best predictors of delinquency in male adolescents. Interestingly, Machiavellianism actually acted as a protective factor in adolescent girls, such that girls scoring higher on Machiavellianism were less likely to engage in delinquent behaviours (Chabrol et al., 2009). Of particular importance, however, were the moderate correlations demonstrated between sadism, Machiavellianism, psychopathy and narcissism; this prompted the proposal of expanding the Dark Triad to include sadism, coining this new construct the “Dark Tetrad” (Chabrol et al., 2009). Relatedly, in their study on unprovoked aggression, Reidy et al. (2011) found that sadism and psychopathy significantly and independently predicted aggressive behaviour.

Buckels and colleagues (2013) sought to examine the validity of incorporating subclinical, or “everyday” sadism into the Dark Triad. Their results demonstrated that when the traits of the Dark Triad were controlled for, sadistic traits significantly predicted

both a preference for killing bugs and hurting others, further corroborating the appropriateness of the Dark Tetrad (Buckels et al., 2013). Given that the Dark Tetrad traits seemingly all relate strongly to aggressive and/or malignant behaviours, it is not surprising that the traits positively correlate with one another (Porter et al., 2014; Ritchie, 2016; Ritchie et al., 2019). Porter et al. (2014) for example, found that psychopathy was most strongly related to Machiavellianism ($r = .69, p < .001$), followed by psychopathy and narcissism ($r = .39, p < .001$) and finally, Machiavellianism and narcissism ($r = .23, p < .05$). Psychopathy has also demonstrated strong associations with everyday sadism ($r = .80, p < .01$) and Machiavellianism ($r = .70, p < .01$), respectively (Ritchie et al., 2019).

Despite the obviously destructive aspects related to the Dark Tetrad, individuals exhibiting high levels of these traits may have some interpersonal advantages as evidenced by their success with manipulative and deceptive behaviours. For example, Jauk et al. (2016) found that in comparison to their lower scoring counterparts, individuals with narcissistic personality traits were viewed by others as more appealing for short-and long-term relationships, while those with psychopathic personality traits were viewed as desirable for short-term romantic relationships. Congruently, extant literature has demonstrated that individuals high on dark personality traits often engage in many sexual and short-term relationships (e.g., Foster et al., 2006; Jonason et al., 2009, 2010; Muñoz et al., 2011). This make sense considering that when examining different love styles, Jonason and Kavanagh (2010) found that the Dark Triad corresponds to a “game playing” love style, or a preference for “playing the ‘game of love’ with a number of different partners” (p. 606). However, when all other traits were held constant, psychopathy was the only independent predictor of this love style (Jonason & Kavanagh,

2010). Further, of the dark traits, psychopathy has demonstrated to be the strongest predictor of psychological, sexual and physical abuse within intimate partner relationships (Carton & Egan, 2017; Pailing et al., 2014). Provided this, in conjunction with the undeniable ability to successfully attract and entice others, it is plausible that of the dark triad, psychopathy may be the most malignant and ‘darkest’ trait.

Psychopathic Personality Overview

Psychopathy is a pervasive, multidimensional personality syndrome comprised of affective (e.g., superficial emotions, lack of remorse, cold-heartedness), interpersonal (e.g., deception, glibness), antisocial (e.g., poor anger control, criminal versatility) and lifestyle (e.g., impulsivity, irresponsibility; Hare, 1996; Hare & Neumann, 2008; Steuerwald & Kosson, 2000) traits. Psychopathic traits are assessed using clinical and/or self-report measures, with the Hare Psychopathic Checklist – Revised (PCL-R; Hare, 2003) being one of the most widely used clinical assessment tools within legal and forensic settings for the measurement of both psychopathy and (non)violent risk, which within the latter has demonstrated strong predictive utility (DeMatteo et al., 2014; Hemphill & Hare, 1995; Khirya et al., 2009; Salekin et al., 1996). The PCL-R is a 20-item clinical assessment tool that yields a total score, ranging from 0 to 40, four facet scores (i.e., 1: affective; 2: interpersonal; 3: lifestyle; 4: antisocial), and two Factor scores (i.e., 1: affective and interpersonal traits; 2: lifestyle and antisocial traits; Hare, 2003). While most measures of psychopathy utilize a continuous approach where higher scores indicate a greater degree of psychopathic traits, the PCL-R uses both a continuous and a cut-off approach where those who reach the cut-off (i.e., a score of 30/40) are considered to meet the clinical threshold for psychopathic personality disorder (Hare, 2003).

Many believe the core traits of psychopathy to be the emotional processing or affective deficits (Dutton, 2012; Hall & Benning, 2006) and yet, psychopaths appear skilled at identifying and exploiting others for intrinsic gain (Book et al., 2007; Wheeler et al., 2009). Indeed, from an evolutionary lens this makes sense. Some evolutionary theories posit that psychopathic traits have been selected and adapted gradually to allow for the variability of trait expression within multiple environmental contexts (i.e., balancing selection theory), or to adaptively react to changing environmental circumstances (i.e., contingent shifts model) in order increase survival/mating strategies (reviewed in Buss, 2009; Glenn et al., 2011). Book and Quinsey (2004), for example, proposed that the psychopathic individual's propensity to engage in cheater (e.g., manipulation, deception) and warrior-hawk (e.g., impulsivity, aggression) behaviours have preserved over time, which would align best with the balancing selection theory (Brazil, 2017). Considering the psychopathic individuals' 'adaptive' tendencies, it is understandable why they have been coined "near-perfect invisible human predator[s]" (Babiak & Hare, 2006, p. 39).

Despite the lay belief that psychopaths are often serial murderers (Smith et al., 2014), prevalence rates within the general community hover around 1% (Coid et al., 2009; Neumann & Hare, 2008), while in the corporate world, these rates increase to approximately 6% (Babiak et al., 2010). Indeed, the famous quote, "we are far more likely to lose our life savings to an oily-tongued swindler than our lives to a steely-eyed killer" (Hare, 1993, p. 6) provides a more accurate portrayal of psychopathy and illuminates the essence of the "successful" psychopath (Hall & Benning, 2006). Consequently, those who have reported working with a psychopathic colleague or

superior have reported increased levels of distress, workplace bullying, financial and marital difficulties, and poorer overall job satisfaction (Beaudette, 2012; Boddy, 2011; Matthieu et al., 2014).

Nevertheless, it would be unreasonable to assume that all psychopaths are “successful”, especially when the levels of irresponsibility and impulsivity often found within the construct are taken into consideration and as such, it is unsurprising that in correctional settings, prevalence rates range from approximately 10-25% (Hare, 1998, 2003; Harpur et al., 1988). Correspondingly, some researchers have argued that antisocial behaviour is an essential feature of psychopathy (e.g., Hare & Neumann, 2005; Lynam & Miller, 2012), with proponents of this notion, Hare and Neumann (2005) stating that “an integral part of psychopathy is the emergence of an early and persistent pattern of problematic behaviours” (p. 58). In male adolescents, for example, psychopathic traits have been linked to committing violence for instrumental or intrinsic purposes (Flight & Forth, 2007; Murrie, et al., 2004), with similar findings being demonstrated in adult populations (Porter & Woodworth, 2006; Woodworth & Porter, 2002).

The aptness for psychopathic individuals to commit higher proportions of instrumental or predatory, rather than reactive violence has been challenged, however. In particular, Blais et al. (2014) conducted a meta-analysis of 53 studies exploring psychopathy’s association with instrumental versus reactive violence. Results did not demonstrate a conclusive preference for one form of violence over the other, but rather demonstrated that Factor 1 scores were related to instrumental violence, while Factor 2 scores were related to reactive violence (Blais et al., 2014). That being said, in comparison to other types of crime (e.g., property, white collar), psychopathic offenders

are certainly more likely to commit generally violent offences (Boduszek et al., 2017) and certain types of sexual offences (e.g., extrafamilial; Beggs & Grace, 2008; Hawes et al., 2013; Knight & Guay, 2006; Robertson & Knight, 2014).

Considering the proclivity towards violent behaviour, research highlighting the overrepresentation of psychopathy within homicide is not altogether unexpected (e.g., Laurell & Dåderman, 2007; Myers & Blashfield, 1997; Woodworth & Porter, 2002). For example, Woodworth and Porter (2002) noted that in their sample of 125 homicide offenders, 27.2% met the criteria for a diagnosis of psychopathy, and of those meeting the criteria, instrumental gain was cited as being the primary motive for homicide. Specifically, Factor 1 scores were the sole predictor of instrumentality within a homicide (Woodworth & Porter, 2002), which is in alignment with Blais et al. (2014) meta-analytic study. Ergo, the association between psychopathy and criminal activity, violence, and antisocial behaviour is robustly apparent; what may not be readily apparent, however, is how they select their victims.

Individual Characteristics and Behavioural Vulnerability Cues

Within social contexts, and in attempt to decode the emotional states and personality traits of others, observers must actively utilize and interpret both nonverbal (e.g., emotions, body language) and verbal cues. Accurately decoding useful social information in this manner is known as the ecological approach to social perception theory (McArthur & Baron, 1983) and is an adaptive mechanism in goal obtainment (Montepare & Zebrowitz-McArthur, 1998). This being said, goal obtainment is dependent on social cues as well as observer motivation and experience, as “different information is essential to the behavioural goals of different people” (McArthur & Baron,

1983, p. 219). From this approach, it could be argued that since those with Dark Tetrad traits engage in high frequencies of manipulation and deception, in conjunction with being driven by intrinsically motivated behaviours, these individuals should demonstrate an astute ability to recognize vulnerability within others by utilizing personality and/or behavioural cues. Past research has corroborated this as individuals with Dark Tetrad traits appear to be adept at identifying and/or extorting weakness in others (e.g., Book et al., 2013; Denardo et al., 2018; Ritchie et al., 2019). The question then, is what personality traits and/or behavioural cues are indicative of vulnerability.

Selkin (1978) has reported that previously sexually victimized individuals are more anxious, depressed, and fearful than nonvictims, and in social situations may show signs of submissiveness and low confidence. In partial response to this, Richards et al. (1991) sought to examine if women displayed non-behavioural cues suggestive of their submissiveness. The authors administered the California Psychological Inventory (Gough, 1975) to undergraduate students and invited the four highest and four lowest female scorers on the dominance subscale in for an interview relating to social debate. Unbeknownst to the interviewees, the interview was recorded and was subsequently analyzed by “decoders” on perceived submissiveness, calmness and overall evaluation. Decoders were provided two videos, one with a submissive subject and one with a dominant subject, and after rating each subject, were told to indicate who they would prefer to approach if they had to get that person to do something against their will (Richards et al., 1991). Results indicated that the submissive interviewees were perceived as calmer and wore more conservative clothing than their dominant counterparts, and decoders were able to identify dominance/submissiveness in the interviewees.

Research within this area has been somewhat mixed however; while some studies have not been able to replicate the association between submissiveness and past victimization (e.g., Blaskovits & Bennell, 2019), other researchers have been able to demonstrate these relations (e.g., Beauregard et al., 2007; Ritchie, 2016; Stevens, 1994). Further, considering the potential role of submissiveness within victimization, it is surmisable that previous victims may exhibit other personality traits, or may be perceived as exhibiting other personality traits. Interestingly, the perceptions of personality in victims varies in offender versus community samples. For example, research has suggested that offenders have a preference for individuals demonstrating extraverted behaviours (e.g., smiling; Beauregard et al., 2007), while in community samples, previously victimized women are reported as appearing less confident (Goetz et al., 2012) and unassertive (Corbin et al., 2001) in social situations. In particular, multiple studies have reported that low levels of sexual assertiveness are not only associated with previous sexual victimization but can act as a predictor of future sexual victimization (e.g., Greene & Navarro, 1998; Kelley et al., 2016; Livingston et al., 2007; VanZile-Tamsen et al., 2005). Alternatively, high levels of sexual assertiveness may actually act as a protective factor against future sexual victimization, highlighting the necessity of incorporating assertiveness building into training and educational programs (Greene & Navarro, 1998; VanZile et al., 2005).

In an attempt to quantify the rationale behind victim selection, Beauregard and colleagues (2007) interviewed 69 male sexual offenders on the process in which they selected their victims. The victim's vulnerability was cited as being a determining selection factor by 30% of offenders, in which age, fragility, and naivety was associated

with perceived vulnerability. Of particular interest, 22% of offenders stated that the victim's personality was important in their decisions, indicating a preference for "caring, affectionate, and extraverted victims willing to smile" (Beauregard et al., 2007, p. 445). Stevens (1994) conducted a similar study on the victim selection methods employed by 61 male rapists and reported that 66% of his sample chose their victims because they appeared vulnerable or like "easy prey". Specifically, some offenders indicated targeting naïve women or women with an affinity for helping others (e.g., nurses, teachers; "I screamed and she came a'run'en", p. 426) to victimize (Stevens, 1994).

Given that personality appears to be associated with past victimization, it would be reasonable that behaviour may also be associated with victimization and vulnerability. Much of the research within this area has looked at gait as a nonverbal behavioural cue indicative of vulnerability, stemming from Grayson and Stein's (1981) work where vulnerability to future victimization was associated with multiple gait cues (e.g., long or short strides, moving unilaterally, gazing downwards). Specifically, this line of research has demonstrated that previously victimized individuals exhibit more vulnerable gait cues (e.g., Blaskovits & Bennell, 2019; Ritchie, 2016) and are more likely to be perceived as introverted (Wolff, 1943).

Gait aside, research has further demonstrated that other types of nonverbal behaviour may be indicative of vulnerability or victimization. For example, in their study, Fetterman and colleagues (2015) demonstrated that submissiveness, which as discussed above has relations with victimization, is associated with arm-crossing movements. Furthermore, Richards et al. (1991) found that submissive women tended to have less expansive full arm and leg movements, more hand and foot movements, and were more

likely to sit still in comparison to their dominant counterparts. Consistent with these findings, Parks and colleagues' (2008) results indicated that female victims of childhood sexual assault were more likely to demonstrate fewer head movements and were less energetic with their body movements. Moreover, in Stevens (1994) study where 66% of his sample of sexual offenders indicated a preference for choosing victims who looked like "easy prey", offenders often cited relying on how their victims carried themselves. For example, one offender stated that "when a woman answered his question and glanced down or looks away, [I] knew she could be victimized" (Stevens, 1994, p. 426).

Interestingly, in their meta-analytic study, Hall et al. (2005) noted that perceptions of dominance, power, and status were associated with "less smiling, more gazing, more lowered brows, a more expressive face, more nodding, less self-touching, more touching of others, more hand/arm gestures, more bodily openness, less bodily relaxation, more bodily shifting, [and] smaller interpersonal distances" (p. 914). Given that submissiveness and by proxy, vulnerability, is considered opposite to dominance, it's unsurprising that these results are aligned with past research indicating that previous victims and/or submissive individuals demonstrate fewer head nods (e.g., Parks et al., 2008), less eye contact (e.g., gazing; Grayson & Stein, 1981; Stevens, 1994), and less bodily openness (e.g., arm crossing; Fetterman et al., 2015). Yet, findings regarding submissiveness and arm, hand, leg, and foot movements have been inconsistent (e.g., Hall et al., 2005; Richards et al., 1991). It is noteworthy to mention that although Hall et al. (2005) did not find an association between dominance and either foot or leg movements, arm and hand movements were coded as one variable, and as such, a distinction between arm and hand movements in submissive or dominant individuals,

may exist. Regardless, it appears that there are links between personality traits (e.g., submissiveness), nonverbal behaviours, and perceptions of vulnerability in others.

Psychopathy and Assessing Vulnerability

There is no doubt that psychopathy is associated with the exploitation and victimization of others, but do psychopathic individuals view everyone as vulnerable or do some people display cues related to their vulnerability that psychopaths can easily detect and extort? Although a relatively new line of inquiry, researchers have sought to examine if this success is due to dark personalities being able to accurately identify previous victimization and vulnerability in others. Findings within this line of research have been mixed, with some indicating that the Dark Triad constructs are not significantly correlated with accuracy in identifying victimization and vulnerability in others, but rather view everyone as weak and vulnerable (Black et al., 2014), while others have reported that the Dark Tetrad, psychopathy in particular, is associated with accuracy in identifying previous victimization (e.g., Book et al., 2013; Ritchie, 2016; Ritchie et al., 2019; Wheeler et al., 2009).

In one of the first studies in this line of research, Wheeler et al. (2009) had male undergraduate participants watch a series of videos depicting people walking (aka ‘walkers’). After viewing each video, participants were asked to rate the walkers’ vulnerability to being mugged (a proxy for past victimization) and to describe how they came to their decision (Wheeler et al., 2009). Results indicated that higher total psychopathy and Factor 1 (interpersonal and affective traits) scores were associated with greater accuracy in correctly classifying past victimization (i.e., victim and nonvictim; Wheeler et al., 2009). The authors noted however, that psychopathy did not appear to be

associated with the ability to articulate what cues they used during their appraisals (Wheeler et al., 2009). Using a similar methodology and the videoclips from Wheeler et al. (2009), Book et al. (2013) sought to examine the effect of psychopathy on vulnerability detection in correctional samples. The authors found similar results as the former in that higher psychopathy total and Factor 1 (affective and interpersonal traits) scores were positively correlated with accuracy in correctly classifying individuals as victims or nonvictims, but also found that inmates with higher Factor 1 scores were significantly more likely to indicate using the walkers' gait in their decision-making process (Book et al., 2013). Intriguingly however, results from Ritchie (2016) indicated that psychopathy total, factor 1 and factor 2 (lifestyle and antisocial traits) scores were significantly associated with perceiving vulnerability to violent victimization, but not to sexual victimization, suggesting that accuracy of assessing other's vulnerabilities may be dependent upon type of victimization.

Interestingly, when examining the impact of psychopathy and gender on perceptions of vulnerability, Ritchie and colleagues (2018) found that similarly to the previous studies, higher total psychopathy scores were positively correlated to accuracy in identifying victims versus nonvictims. In contrast with past research however, Factor 2 rather than Factor 1 scores were associated with correct classification of victims (Ritchie et al., 2018). Further, when analyzing the interaction between psychopathy and gender on victimization accuracy, only males scoring higher on psychopathy were significantly better at correctly identifying previous victims (Ritchie et al., 2018). Similarly, in their study, Denardo et al. (2018) found that when solely utilizing gait cues, those scoring higher on Factor 2 and total psychopathy were better able to identify previous victims

versus nonvictims. Results also indicated that although victims who took self-defence classes were rated as less vulnerable overall in comparison to both nonvictims and victims who did not partake in self-defence training, those scoring high on psychopathy were also significantly better at identifying individuals who took self-defence classes as previous victims than their lower psychopathic counterparts (Denardo et al., 2018), perhaps suggesting the expertise of psychopathic individuals in assessing vulnerability in others.

The purpose of the present research then, was to examine the relationship between nonverbal behaviours and vulnerability to future victimization (Study 1), and how personality constructs (e.g., Dark Tetrad) influenced the perceptions of vulnerabilities within others (Study 2).

Study 1: Purpose

Previous research has demonstrated an association between personality traits (e.g., assertiveness and submissiveness), behaviour, and perceived vulnerabilities (e.g., Grayson & Stein, 1981; Parks et al., 2008; Richards et al., 1991), but the manner in which these behaviours and/or personality traits are exhibited appears to be inconsistent. Provided that this line of inquiry has largely considered victims of sexual crimes while nonsexual violence, specifically in women, has received limited to no empirical attention, it is possible that personality traits may differ by a function of victimization type (e.g., sexual, nonsexual violent). Moreover, the literature on nonverbal behaviours has principally considered gait as an indicator of vulnerability, while research into other nonverbal cues that may be suggestive of vulnerability is seemingly non-existent. Therefore, the purpose of Study 1 was to assess the relationship between personality traits

(specifically assertiveness and submissiveness), nonverbal behaviours (other than gait), and perceived vulnerability to sexual and nonsexual violent victimization (herein known as “violent victimization”).

Research Question 1: How are assertive and submissive personality traits associated with perceived vulnerability to future victimization? Which personality trait (i.e., assertiveness, submissiveness) is most salient in the prediction of vulnerability to future victimization?

The majority of the literature surrounding personality differences between victims and nonvictims has focused on assertiveness and submissiveness. Specifically, many researchers have found that previously victimized individuals tend to be more submissive and less assertive than nonvictims (e.g., Beauregard et al., 2007; Corbin et al., 2001; Greene & Navarro, 1998; Ritchie, 2016; Selkin, 1982). In particular, research has demonstrated a link between low assertiveness and victimization, principally in the relation to sexual victimization (e.g., Corbin et al., 2011; Greene & Navarro, 1998; Livingston et al., 2007; VanZile-Tamsen et al., 2005). Opposingly (and somewhat intuitively), high levels of sexual assertiveness have been reported as being a protective factor against future sexual victimization (Green & Navarro, 1998). On the contrary to sexual victimization however, very little research has considered the personality traits of female victims of violent victimization. Finally, in the past assertiveness has been utilized as a proxy measure for vulnerability (see Black et al. 2014; Ritchie, 2016).

Hypothesis 1: I predicted that assertiveness would be negatively, and submissiveness positively related with perceived vulnerability for future sexual victimization. Alternatively, as research regarding the relationship between female

victims of violent victimization is limited, the association between assertiveness/submissiveness and vulnerability to violent victimization was exploratory.

Hypothesis 2: I hypothesized that assertiveness would demonstrate the most salience in the prediction of vulnerability to future sexual victimization. As the literature regarding nonsexual violence in females is lacking, the saliency of personality traits in the prediction of violent vulnerability was exploratory.

Research Question 2: How are assertive and submissive personality traits associated with nonverbal behavioural cues?

Past research has identified a number of nonverbal behavioural cues that appear to be associated with submissive traits and vulnerability. Particularly, researchers have indicated that submissiveness is related to the tendency to engage in arm-crossing behaviours, isolated hand and foot actions, less head movements and energetic/expansive bodily motions (e.g., Fetterman et al., 2015; Parks et al., 2008; Richards et al., 1991). Unfortunately, research concerning the relationship between other personality traits and nonverbal vulnerability cues is either mixed or lacking. For example, in their study, Blaskovits and Bennell (2019) reported that higher levels of self-reported dominance, and not submissiveness, was associated with vulnerable gait patterns. This said, it is noteworthy to mention that the authors recommend that future research should further examine the association between self-reported dominance and vulnerable gait patterns to ensure authenticity and replicability of results (Blaskovits & Bennell, 2019). Further, as researchers have often used assertiveness as a proxy measure for submissiveness, it stands to reason that individuals with low levels of assertiveness would demonstrate similar nonverbal behaviours as those scoring high in submissive traits.

Hypothesis 3: I expected that assertiveness would be negatively associated, and submissiveness would be positively correlated with fidgeting, arm and/or leg crossing behaviours, isolated hand and/or foot movements, such that those scoring low on assertiveness and high on submissiveness, would engage in higher frequencies of these actions. Further, I hypothesized that assertiveness would positively and submissiveness negatively, correlate with head movements and energetic or animated behaviours.

Research Question 3: How is vulnerability to future victimization (i.e., sexual, violent) associated with nonverbal vulnerability cues?

Extant literature has demonstrated that previously victimized individuals have distinct walking patterns (e.g., long or short strides, straight knees, abnormally wide strides; Grayson & Stein, 1981), maintain less eye contact (Grayson & Stein, 1981; Stevens, 1994), and may be selected for victimization according to extraverted-type behaviours, including smiling (e.g., Beauregard et al., 2007). Further, individuals high in submissiveness, which has demonstrated to have strong relations to both past victimization and vulnerability to future victimization, tend to demonstrate fewer head movements (Parks et al., 2008), less bodily openness (Fetterman et al., 2015) (Richards et al., 1991) and arm-crossing behaviours (Fetterman et al., 2015). Further, while some researchers have shown that submissive individuals engage in higher rates of isolated hand or foot movements and less full arm or leg movements (Richards et al., 1991), others have demonstrated that dominance is positively related to hand and arm gestures (Hall et al., 2008).

Hypothesis 4: I hypothesized that the nonverbal behaviours associated with vulnerability would map onto those identified in past research as associated with previous

victimization and submissiveness. Specifically, I predicted that those who self-report as being vulnerable to future sexual and violent victimization would engage in higher frequencies of smiling and arm-crossing behaviours, maintain less eye contact, and would demonstrate fewer head nods and less bodily openness.

Study 1: Method

Participants

As previous research has utilized female participants as targets in victimization and vulnerability studies (e.g., Richards et al., 1991; Ritchie et al., 2019), a sample of 41 female undergraduate psychology students were recruited from a Southern Ontario University, with a mean age of 19.35 years ($SD = 2.67$; range = 17 to 31). The majority of participants identified as White (70%), followed by Asian (10%), Black (5%), Arab (5%), Mixed (5%), Latin American (2.5%), and West Indian (2.5%). Following ethical approval from the host institution, participants were recruited via email (Appendix H) to take part in the in-person study at a Southern Ontario University. Participants provided informed consent, were compensated with either \$20 cash payment or 1% course credit for their participation and were treated in accordance with TCPS-2 ethical guidelines. Notably, one participant did not consent to partake in the study at the outset, resulting in a final sample size of 40, with demographic information remaining consistent to that identified above.

Measures

Demographic Questionnaire

Participants (herein known as “daters”) were asked three questions related to their basic demographic information (i.e., age, gender, and race/ethnicity).

Rathus Assertiveness Schedule

The Rathus Assertiveness Schedule (RAS; Rathus, 1973; Appendix A) is a 30-item self-report questionnaire used to assess the assertiveness of the individual being assessed (see Appendix A for items). Participants respond to all items (e.g., “most people seem to be more aggressive or assertive than I am.”, “I find it embarrassing to return merchandise”) on a 6-point Likert scale ranging from -3 (“*very much unlike me*”) to 3 (“*very much like me*”), with higher total scores indicating more social skills. Using an exploratory factor analysis, Caballo et al. (2014) have identified six factors: 1) interacting with commercial firms, 2) expressing annoyance or displeasure, 3) defending my own position, 4) interacting with others in an extraverted way, 5) expressing feelings openly, and 6) refusing requests. The RAS has demonstrated good internal consistency (i.e., Cronbach’s $\alpha = .82$; Caballo et al., 2014; Gustafson, 1992), test-retest (i.e., $r = .78$; Caballa et al., 2014), split-half reliability (e.g., r s ranging from .77 to .80; Caballo et al., 2014; Rathus, 1973), and validity ($r = .70$; Rathus, 1973).

HEXACO-60

The Honesty-humility, Emotionality, eXtraversion, Agreeableness, Contentiousness, Openness – 60 (HEXACO-60; Ashton & Lee, 2009)¹ is a 60-item self-report questionnaire used to assess varying personality traits including those from the Big Five and honesty-humility, that was derived from the larger 100-item HEXACO-PI-R. Participants are asked to respond to series of questions (e.g., “I would be quite bored by a visit to an art gallery”, “I rarely express my opinions in group meetings”) using a 5-point Likert scale ranging from 1 (“*strongly disagree*”) to 5 (“*strongly agree*”). The HEXACO-

¹ While the HEXACO-60 was administered as part of a larger research project, it was not examined in Study 1.

60 has six subscales (i.e., honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, openness). See Appendix B for items.

The HEXACO-60 has been normed for university and community samples and has demonstrated good psychometric properties (Ashton & Lee, 2009). Specifically, Ashton and Lee (2009) have demonstrated the HEXACO-60 to have respectable internal consistency in community and university settings, with Cronbach's alphas ranging .73 (extraversion) to .80 (openness), and .77 (agreeableness/openness) to .80 (extraversion), respectively. Furthermore, the HEXACO-60 has demonstrated good self-observer agreement, and convergent validity with the NEO-FFI (Ashton & Lee, 2009).

IASR-B5

The Revised Interpersonal Adjectives Scale – Big Five (IASR-B5; Trapnell & Wiggins, 1990) is a 124-item self-report questionnaire used to assess interpersonal traits. Participants respond to a series of personal adjectives (e.g., “Bold”, “Tender”) on a 7-point Likert scale from 1 (“*extremely inaccurate*”) to 7 (“*extremely accurate*”), where a score of 7 would mean that the participant believes that the personal adjective describes them extremely accurately. The IASR-B5 comprises of five factor scales (i.e., DOM (surgency/extraversion), LOV (agreeableness), conscientiousness, openness to experience, neuroticism) and eight interpersonal octants (i.e., warm-agreeable, gregarious-extraverted, assured-dominant, arrogant-calculating, cold-hearted, aloof-introverted, unassured-submissive, unassuming-ingenuous). For the purpose of the present study, I only looked at the interpersonal octants “unassured-submissive” “assured-dominant”, and “warm-agreeable” as proxy measures for submissiveness, dominance, and nurturance, respectively (see Appendix C).

The IASR-B5 has demonstrated moderate to strong internal consistency ratings for the interpersonal octants with Cronbach's alphas ranging from .77 (unassuming-ingenuous) to .88 (warm-agreeable; Horst, 1968), and for its factor domains, with Cronbach's alphas ranging from .87 (Openness to experience) to .94 (LOV, DOM); Trapnell & Wiggins, 1990). The IASR-B5 has also demonstrated adequate convergent and divergent validity with both the NEO Personality Inventory (Costa & McCrae, 1985) and the Hogan Personality Inventory (Hogan, 1986; Trapnell & Wiggins, 1990).

Vulnerability Questionnaire

The Vulnerability Questionnaire (VQ; see Appendix D) is a 2-item self-report questionnaire used to assess future vulnerabilities to nonsexual violent and sexual victimization. This questionnaire was adapted from Wheeler (2010) for the purpose of this study. Respondents were asked to indicate how vulnerable they feel towards future sexual and nonsexual violent victimization using a scale ranging from 0% ("*not vulnerable*") to 100% ("*very vulnerable*").

Videos

Videos of all dating profiles in the present study were recorded using a GoPro HERO3 camera. The camera was positioned on a tripod at a standardized position (e.g., 4 feet away) from daters. All videos were full body, taken against a white backdrop and daters were asked to remove any obstructions from their face and body (e.g., purse, hat, coffee). For standardization purposes, each video was cut to forty-five seconds in length and did not have audio.

Nonverbal Behaviour Coding Guide

Adapted from Hall et al. (2005) meta-analytic study of nonverbal behaviour, daters were assessed using the 25-item Nonverbal Behaviour Coding Guide (see Appendix E) according to categories and specific nonverbal behaviours identified in past research (e.g., Grayson & Stein, 1981; Hall et al., 2005; Parks et al., 2008; Richards, et al., 1991). Behavioural cues were scored according to a 3-point Likert scale ranging from 0 (“*not at all*”) to 2 (“*a lot*”). All behaviours were coded in the sample to see if any behavioural patterns emerged between low versus high assertive daters.

Emotional State Check Questionnaire

To assess for emotional state during the video recording, daters were asked to complete the 4-item Emotional State Check Questionnaire (ESCQ; see Appendix F). The ESCQ was adapted from the IASR-B5 (Trapnell & Wiggins, 1990) interpersonal octants “assured-dominant” and “unassured-submissive”. Specifically, two personal adjectives from each subscale (i.e., self-assured, timid, confident, shy) were included within the current questionnaire. Interpersonal adjectives were scored using a 5-point Likert scale ranging from 1 (“*extremely inaccurate*”) to 5 (“*extremely accurate*”), where a score of 5 would mean that the dater felt that particular adjective was an extremely accurate representation of how they were feeling during the recording of their dating profile.

Procedure

As lacking in sexual assertiveness is related to sexual (re)victimization, in addition to past research utilizing the RAS as an alternative measure of vulnerability, for the purpose of the present study, assertiveness was employed as a proxy measure of vulnerability rather than the unassured-submissive octant of the IASR-B5 to capture the

potential communicative component of victimization and vulnerability. To ensure a range of assertiveness scores within the sample, only daters who scored within the upper and lower quartiles of the RAS, as indicated from mass-testing at the beginning of the academic year, were recruited. Eligible daters were recruited using the Host University's online SONA scheduling software. Upon arriving at the University lab, daters completed an informed consent form and once consent was obtained, daters were directed to sit at a pre-determined location within the same laboratory and were reminded that they would create a dating profile approximately one to two-minutes in length by discussing their interests/hobbies and were told to act as naturally as possible to encapsulate their personality to the best of their ability within their video. Although daters were informed that what they disclose/discuss in their video was up to their discretion, they were provided with the Dater Video Script (DVS; Appendix G) that they could use to base their responses on to prevent any stalls during filming. Daters were then given up to five minutes to look over the DVS to formulate their responses and/or think about what they would like to say in their video. Once daters indicated they were ready, filming began; to ensure authenticity of gaze, the researcher stepped out of view to ensure that the daters would not interact or engage with the researcher during filming. Once finished, daters completed the ESCQ, followed by the demographic questionnaire, RAS, IASR-B5, HEXACO-60 and the VQ, in randomized order. Following the completion of the questionnaire portion of the study, daters had the option to view their video and the criteria in which future participants may rate their videos on. Daters were provided with the secondary consent form obtaining consent for their videos to be used in future

research and/or educational settings (e.g., conferences). Once obtained, daters were provided with debriefing materials and compensation, concluding the study.

Four female independent raters blind to the purpose of the study were recruited to watch each video and using a three-point scale, scored daters on the degree of presence or absence of a variety of nonverbal cues according to the Nonverbal Behaviour Coding Guide (see Appendix E). Two raters were randomly assigned to code the videos of daters who scored within the lower quartiles of the RAS ($N = 21$, $M = -44.41$, $SD = 10.47$, range = -58 to -25), with the remaining two raters coding the videos of the high scoring RAS daters ($N = 19$, $M = 18.37$, $SD = 24.67$, range = -31 to 66; herein known as low raters and high raters, respectively).

Study 1: Results

Data Management

Missing data

Prior to analysis, data were first screened for missing values. Upon visual inspection, one item was missing from the assured-dominant octant of the IASR-B5, and each of the extraversion, agreeableness, and conscientiousness dimensions of the HEXACO-60. Further, two items were missing from the RAS, and from the openness to experience Subscale of the HEXACO-60. Only two participants were missing more than one item; one participant was missing two items, one item from the RAS and one from the HEXACO-60, and another participant was missing three items in total, one from the RAS and two from the HEXACO-60. Utilizing independent samples *t*-tests, an analysis of missing variables was then conducted on all items with missing values (i.e., IASR-B5, RAS, HEXACO-60 items) against age, where items with missing values were dummy

coded such that 0 = completed and 1 = missing. Results for each t -test were insignificant (i.e., $p > .05$), indicating that there was no relationship between age of daters and missing variables, suggesting that data are missing at random. As an extension of this method, Little's (1988) Missing Completely at Random (MCAR) test was then conducted on the items comprising each key personality variable to be used within the primary analyses (i.e., RAS, unassured-submissive octant of IASR-B5); Little's MCAR test was insignificant ($\chi^2 = 72.060$, $df = 74$, $p = .54$), corroborating the former findings that missing values are MCAR, and as such, less critical approaches to missing data may be utilized (Rhoads, 2012; Tabachnick & Fidell, 2013).

As using only complete cases (i.e., engaging in listwise deletion) would result in a loss of 12.5% ($N = 5$) of participants, missing data were statistically imputed using Expectation Maximization methods on the missing items of each subscale. Expectation Maximization (EM) methods are the preferred technique when researchers seek to estimate missing data that are MCAR (Tabachnick & Fidell, 2013). While Graham et al. (2003) argue that due to error not being added into the new values, EM methods produce biased estimates, subsequently generating inaccurate estimates of standard error, Tabachnick and Fidell (2013) maintain that EM is a suitable data imputation technique when the amount of missing data is small, however results should be interpreted with caution.

Outliers

Next, data were screened for any potential outliers using two methods; first, key variables were visually inspected via boxplots and second, key variables were then transformed into z -scores to ensure that no data point fell beyond a z -score of ± 3.29 , which Field (2013) states is indicative of being an extreme outlier. Upon visual

inspection of boxplots, one potential outlier (i.e., participant 27) was identified from the warm-agreeable octant of the IASR-B5. Following this, inspection of z-scores indicated that participant 27 remained an outlier (i.e., $z = -3.60$). Given that missing values were previously defined and there were no errors in data entry or unintended sampling, the outlier was changed to one raw score below the next highest score (i.e., 35) to reduce the effect but maintain its rank order. Specifically, case 27's raw score on the warm-agreeable octant of the IASR-B5 was changed from 18 to 34. To ensure that this outlier has been reduced sufficiently, data for this variable was again transformed into a z-score, which indicated that case 27 was no longer an outlier ($z = -2.23$; Tabachnick & Fidell, 2013). Next, multivariate outliers were assessed using Mahalanobis distance, which utilizes chi-square distributions to determine if any particular case falls beyond the centroid of all existing cases (Tabachnick & Fidell, 2013). As no Mahalanobis distance value exceeded the critical value of 29.59 ($p < .001$; $df = 10$), there are no multivariate outliers identified within the dataset (Tabachnick & Fidell, 2013).

Normality and Homoscedasticity

Data were then screened for normality by visually inspecting histograms, P-P plots, and Q-Q plots for each key variable. Upon visual inspection, key variables appeared to be normally distributed. As a follow-up, normality of data were then assessed using kurtosis and skewness-ratios, and the Kolmogorov-Smirnov and Shapiro-Wilks tests. When analyzing kurtosis and skewness-ratios, values exceeding ± 3.29 would suggest that data demonstrate significant skewness or kurtosis at $p < .001$, however these values should only be considered when sample sizes are relatively small (Field, 2013); alternatively, when considering the Kolmogorov-Smirnov and Shapiro-Wilks tests,

significant results (i.e., $p < .05$) indicate that the variable is significantly different from a normal distribution (Field, 2013). Accordingly, no dependent variable had a skewness or kurtosis-ratio value exceeding ± 3.29 indicating no issue with either skewness or kurtosis. Similarly, for sexual vulnerability, Kolmogorov-Smirnov and Shapiro-Wilks ($p > .05$) values were insignificant (i.e., $D(40) = 0.112$, $p = .20$; $p = .056$) indicating that the distribution of these two variables do not significantly differ from a normal distribution. However, for violent vulnerability, while the Kolmogorov-Smirnov test was insignificant ($D(40) = 0.126$, $p = .11$), the Shapiro-Wilks test was significant ($p = .046$), indicating that for this variable, normality may be of concern. However, as Fields (2013) states, in large sample sizes ($N > 30$), these tests may be significant, even when normality is not of concern, and as such, both the Kolmogorov-Smirnov and Shapiro-Wilks test should not be utilized or should be interpreted with caution. Considering this and based on a visual inspection of histograms, P-P plots and Q-Q plots of violent vulnerability, normality can be inferred.

Finally, upon visual inspecting of plots of standardized residuals against predicted values for each dependent variable, there appeared to be no systematic relationship between predicted versus standardized values and the data appear linear, suggesting that there was no issue of either heteroscedasticity or linearity within the data.

Interrater Reliability

Interrater reliability (IRR) was calculated by utilizing 19 videos from the high scoring RAS group and 21 videos from the low scoring RAS group. Using a two-way random effects intraclass correlation (ICC), the absolute agreement of the high raters was .81, while the absolute agreement of the low raters was .70, indicating good and moderate

IRR, respectively. Percent agreement for all 25 nonverbal behaviours ranged from 14-100% for the raters from the high scoring RAS group and 10-100% for the raters from the low scoring RAS group (see Table 3). Given that some behaviours demonstrated low agreement in either the high (e.g., moved head, 14%) or low (e.g., fidget, 10%) rater RAS groups, average percent agreements were calculated and any behaviour that scored below a 50% average agreement was removed from subsequent analyses, resulting in the removal of moved head (26%), fidget (38%), and moved hands (40%). Further, although the average agreement for gaze ahead fell below 50% (i.e., 43%), this item was kept in for subsequent analyses due to the previously identified associations between eye contact, vulnerability and victimization (e.g., Stevens, 1994; Grayson & Stein, 1981). Finally, despite the remaining three gaze-based movements (i.e., gaze down, gaze side, gaze up) scoring above 50% on average agreement, this was marginal (i.e., 52%, 55%, 50%, respectively) and as such, to generate a more consistent scoring, all three gaze behaviours were averaged into one new behaviour, gaze away.

With the three lowest scoring values removed, IRR for both high and low RAS group raters was recalculated, resulting in ICC values of .84 and .82, respectively. Although ICC values improved post removal and are considered acceptable, given the disparities between the raters on some body movements (e.g., forward eye gaze), to help offset any potential rater biases (e.g., systematically scoring high or low), average scores for both high and low RAS group raters were computed, and the new values were included in data analysis.

Table 3*Percent Agreement of Nonverbal Behaviours for Low and High Raters*

Nonverbal Behaviour	Low Raters Agreement (%)	High Raters Agreement (%)	Average Agreement between Raters (%)
1. Gaze Ahead	33.33	52.30	42.82
2. Gaze Down	66.67	38.09	52.38
3. Gaze side	66.67	42.80	54.75
4. Gaze up	42.86	57.14	50.00
5. Frown	71.42	76.19	73.81
6. Smile	66.67	75.00	70.84
7. Laugh	61.90	57.89	59.90
8. Animated	52.38	71.42	61.90
9. Engaged	55.00	61.90	58.45
10. Moved Head	38.09	14.28	26.19*
11. Moved Hands	33.33	47.61	40.47*
12. Moved Feet	71.41	57.14	64.28
13. Moved Arm	66.67	36.84	51.76
14. Moved Leg	38.09	80.95	59.52
15. Crossed Leg	100	76.19	88.10
16. Crossed Feet	76.19	80.95	78.57
17. Tucked Leg	100	95.23	97.62
18. Crossed Leg on Chair	100	100	100
19. Crossed Arm	90.47	100	95.24
20. Crossed Hands	47.61	80.95	64.28
21. Open Posture	57.14	61.90	69.52
22. Relaxed Posture	57.14	71.43	64.29
23. Tense Posture	38.09	61.90	50.00
24. Self-touch	71.42	66.67	69.05
25. Fidget	9.52	66.67	38.10*

Note. *removed from future analyses.***Descriptive Statistics and Internal Consistency***

For a list of descriptive statistics and internal consistency ratings for key variables (i.e., vulnerability, assertiveness, unassured-submissive personality traits) see Table 4.

Although the assured-dominant and warm-agreeable octants of the IASR-B5 and the

HEXACO-60 subscales are not included in the primary analyses, descriptive statistics and internal consistencies can be found in Table T1. Overall, internal consistency for both the RAS and unassured-submissive octant (herein referred to as “submissive”) of the IASR-B5 are excellent, except for assertiveness in low RAS scores, which demonstrated unacceptable internal consistency ($\alpha = .49$).

Table 4

Means, Standard Deviations and Internal Consistencies for Vulnerability and Key Personality Variables

Scale	<i>M</i>	<i>SD</i>	Range	Cronbach's α
Vulnerability				
Sexual	46.95	27.45	4 to 100	-
Violent	38.03	24.90	4 to 90	-
RAS				
Assertiveness	-14.59	36.68	-58 to -66	.95
Low	-44.41	10.47	-58 to -25	.49
High	18.37	24.67	-33 to -66 ²	.86
IASR-B5				
Unassured-Submissive	36.33	12.20	10 to 55	.91

Note. - = information not applicable; RAS = Rathus Assertiveness Schedule (Rathus, 1973); IASR-B5 = The Revised Interpersonal Adjectives Scale – Big Five (Trapnell & Wiggins, 1990).

Vulnerability Ratings and Emotional State Check

Sexual and violent vulnerability ratings were significantly positively correlated ($r = .43, p = .006, 95\% \text{ CI } [.07, .71]$) with a moderate effect size. Further, emotional state checks following video recording showed significant correlations (i.e., $ps < .01$; see Table 5) in expected directions with both assertiveness and submissiveness, with moderate to large effect sizes. Specifically, assertiveness was positively related to feeling self-assured

² Low/high RAS groupings were based off RAS scores as indicated from mass testing, however the descriptive statistics provided in Table 4 are from re-administration of the RAS (i.e., re-testing).

and confident, and negatively with feeling timid and shy, while submissiveness was positively related to feeling timid and shy, and negatively to feeling confident or self-assured, post-video.

Table 5

Bivariate Correlations between Assertiveness, Submissiveness, and Emotional State

Check Items

Emotion	Assertive [95% CI]	Submissive [95% CI]
Self-assured	.50** [.21, .71]	-.56* [-.71, -.31]
Timid	-.62** [-.80, -.29]	.64** [.32, .82]
Confident	.57** [.31, .77]	-.65** [-.79, -.46]
Shy	-.64** [-.79, -.38]	.64** [.37, .79]

Note. Assertive = Rathus Assertiveness Schedule (Rathus, 1973); Submissive = unassured-submissive octant of the Revised Interpersonal Adjectives Scale – Big Five (Trapnell & Wiggins, 1990); CI = Confidence Interval.

** $p < .01$.

Primary Analysis

Personality and Vulnerability

A series of bivariate correlations were first conducted to assess how key personality variables (i.e., assertive, submissive) are associated with vulnerability to specific types of victimization (i.e., sexual, violent; RQ1). Bivariate correlations are most often employed when both the outcome and predictor variable are continuous (e.g., personality, nonverbal vulnerability cues) and as assumptions were met and there was no bias (e.g., outliers) for key variables (i.e., RAS, unassured-submissive octant of IASR-B5), Pearson's r was employed (Field, 2013). According to Cohen (1998, 1990), an r of

.1 denotes a small effect size, while r 's of .3 and .5 indicate moderate and large effect sizes, respectively.

As previous research has demonstrated that individuals low on assertiveness and high on submissiveness tend to have victimization histories (e.g., Beauregard et al., 2007; Corbin et al., 2001; Greene & Navarro, 1998; Ritchie, 2016; Selkin, 1982), it was hypothesized that both assertiveness and submissiveness would be negatively and positively associated to perceived vulnerability to future sexual victimization, respectively. While assertive and submissive personality traits were strongly negatively correlated ($r = -.75, p < .001, 95\% \text{ CI } [-.87, -.57]$), the former hypothesis was only partially supported. Assertiveness was negatively related to sexual vulnerability ($r = -.39, p = .012, 95\% \text{ CI } [-.52, -.06]$), but not related to violent vulnerability, while submissiveness was unrelated to all forms of vulnerability (see Table 6). Though the assured-dominant and warm-agreeable octants of the IASR-B5 and the HEXACO dimensions were not included in the primary analysis of the present study, the relationship between these personality variables and vulnerability can be found in Appendix T (see Table T2³).

³ As one outlier was identified in the warm-agreeable octant of the IASR-B5, Spearman's r was employed to utilize ranked data rather than raw scores, while the remaining personality variables utilized Pearson's r .

Table 6

Bivariate Correlations between Vulnerability to Future Victimization, Assertive, and Submissive Personality Variables

Vulnerability Type	Assertive	Submissive
Sexual	-.39*	.21
Violent	-.14	.10

Note. Assertive = Rathus Assertiveness Schedule (Rathus, 1973); Submissive = unassured-submissive octant of the Revised Interpersonal Adjectives Scale – Big Five (Trapnell & Wiggins, 1990).

* $p < .05$.

Next, to determine which personality trait was the most salient in the prediction of vulnerability to future victimization, a series of linear regressions were conducted.

Importantly, however, as assertiveness was unrelated to violent vulnerability and submissiveness had insignificant relations across all vulnerability types, assertiveness was the sole predictor included into the models for vulnerability to sexual victimization. Provided that assertiveness has been used as a proxy measure of vulnerability in the past (e.g., Black et al., 2014; Ritchie, 2016), it was hypothesized that assertiveness would demonstrate the most salience in the prediction of sexual vulnerability. Consistent with this hypothesis, results indicated that assertiveness was a significant predictor for sexual ($t(38) = -2.632$, $\beta = -.294$, $p = .012$) vulnerability, with an R^2 of .154. Put simply, assertiveness accounted for 15.4% of the variance in sexual vulnerability, and for every one-unit increase in assertiveness, sexual vulnerability ratings decreased by .294 units.

Assertiveness, Submissiveness and Nonverbal Behaviours

With evidence to suggest that submissiveness is associated with increased rates of arm-crossing, hand and foot movements, and less head and energetic behaviours (e.g., Fetterman et al., 2015; Parks et al., 2008; Richards et al., 1991), a series of bivariate

correlations were then conducted to assess how assertive and submissive personality traits relate to nonverbal behavioural cues (see Table 7; RQ2). It was hypothesized that submissive scores would be positively associated with fidgeting, body crossing behaviours, hand/foot movements, and negatively related to head and energetic/expansive behaviours, while assertiveness would demonstrate an inverse relationship with these behaviours; specifically, I predicted that assertive individuals would demonstrate less fidgeting, arm-crossing, and hand/foot movements, while simultaneously exhibiting more head and energetic behaviours. This said, due to low interrater agreement, the relationships between personality traits and head, hand, and fidgeting behaviours were not assessed. Nevertheless, this hypothesis was primarily unsupported; results indicated that assertiveness was moderately negatively related to entire leg movements ($r = -.40$, $p = .011$, 95% CI $[-.62, -.10]$), but strongly negatively related to self-touch ($r = -.76$, $p < .001$, 95% CI $[-.87, -.61]$), such that individuals scoring low on assertiveness were more likely to move their legs and to engage in self touching behaviours.

Similarly, while submissiveness also demonstrated a strong relationship with self-touch ($r = .56$, $p < .001$, 95% CI $[-.34, .75]$), this relationship was positive indicating that those who scored high on submissiveness were more likely to engage in self-touching behaviours. Finally, submissiveness exhibited a moderately negative correlation with laughing ($r = -.31$, $p = .049$, 95% CI $[-.90, -.06]$), such that individuals scoring high on submissiveness laughed fewer times than their low scoring counterparts.

Table 7*Bivariate Correlations between Nonverbal Behaviours and Key Personality Variables*

Nonverbal Behaviour	Assertive	Submissive
1. Gaze Ahead	-.12	.05
2. Gaze Away	-.22	.13
3. Frown	-.19	.20
4. Smile	.10	-.24
5. Laugh	.03	-.31*
6. Animated	.27	-.27
7. Engaged	.01	-.27
8. Moved Feet	-.23	.20
9. Moved Arm	-.21	.00
10. Moved Leg	-.40**	.18
11. Crossed Leg	-.01	.01
12. Crossed Feet	-.24	.16
13. Tucked Leg	.15	-.07
14. Crossed Leg on Chair	-	-
15. Crossed Arm	-.08	.19
16. Crossed Hands	-.02	.07
17. Open Posture	.03	-.23
18. Relaxed Posture	-.06	-.21
19. Tense Posture	-.14	.21
20. Self-touch	-.76**	.56**

Note. - = could not be computed because at least one variable is constant (i.e., all scores were rated as 0); Assertive = Rathus Assertiveness Schedule (Rathus, 1973); Submissive = unassured-submissive octant of the Revised Interpersonal Adjectives Scale – Big Five (Trapnell & Wiggins, 1990).

* $p < .05$. ** $p < .01$.

Additionally, although not significant at an alpha level of .05, animated behaviours (i.e., facial expressiveness, gestures [irrespective of emotion]) approached significance for both assertive ($r = .27, p = .091, 95\% \text{ CI } [-.03, .55]$) and submissive ($r = -.27, p = .093, 95\% \text{ CI } [-.57, .08]$) personality types such that those scoring high on assertiveness engaged in more animated behaviours, while those scoring high on submissiveness demonstrated less animation. The latter personality trait also revealed an

approaching significant negative relationship with engagement in conversation ($r = -.27$, $p = .098$, 95% CI $[-.59, .09]$). Despite not being included in the primary analyses, the relationships between nonverbal behaviours, and both the HEXACO dimensions of personality as well as the assured-dominant and warm-agreeable octants of the IASR-B5 can be found in Table T3.

Nonverbal Behaviours and Vulnerability

The final series of bivariate correlations were conducted to examine how nonverbal behaviours relate to vulnerability to specific types of victimization (i.e., sexual, violent; see Table 8; RQ3). With research indicating that previously victimized individuals engage in eye averting behaviours (e.g., Grayson & Stein, 1981) and score high on submissiveness, which has exhibited positive relations to isolated hand/foot movements and negative associations with head movements, bodily openness, and arm crossing behaviours (e.g., Fetterman et al., 2015; Parks et al., 2008; Richards et al., 1991), it was predicted that vulnerability to future victimization would be associated with less eye contact, higher frequencies of smiling and body crossing behaviours, fewer head nods and less bodily openness. Again, due to low interrater agreement, the relationships between vulnerability and head, isolated hand, and fidgeting behaviours were not analyzed.

Table 8*Bivariate Correlations between Nonverbal Behaviours and Vulnerability to Future**Victimization*

Nonverbal Behaviour	Sexual Vulnerability	Violent Vulnerability
1. Gaze Ahead	.01	.03
2. Gaze Away	.34*	.05
3. Frown	.03	.16
4. Smile	-.03	-.20
5. Laugh	.09	-.07
6. Animated	-.07	-.18
7. Engaged	-.22	-.27
8. Moved Feet	.23	.23
9. Moved Arm	.17	.03
10. Moved Leg	.15	.26
11. Crossed Leg	.21	-.19
12. Crossed Feet	-.08	.42**
13. Tucked Leg	-.22	-.21
14. Crossed Leg on Chair	-	-
15. Crossed Arm	.12	-.21
16. Crossed Hands	-.07	.18
17. Open Posture	-.26	.03
18. Relaxed Posture	-.11	-.02
19. Tense Posture	.12	-.08
20. Self-touch	.29	.09

Note. - = could not be computed because at least one variable is constant (i.e., all scores were rated as 0).

* $p < .05$. ** $p < .01$.

Results demonstrated that vulnerability to sexual victimization was moderately positively associated with gaze aversion (i.e., side, down or upwards gaze; $r = .34$ $p = .032$, 95% CI [.05, .57]), such that those who rated themselves as more vulnerable to sexual victimization were more likely to look away from the camera. Further, while only approaching significance, sexual victimization was also positively related to self-touch ($r = .29$, $p = .067$, 95% CI [-.01, .55]). Alternatively, violent victimization was positively

correlated to crossing one's feet ($r = .42, p = .006, 95\% \text{ CI } [.08, .67]$), where those who self-reported as being more vulnerable to violent victimization engaged in more foot crossing behaviour. Lastly, engagement in conversation demonstrated a negative relationship with violent vulnerability ($r = -.27, p = .094, 95\% \text{ CI } [-.53, .04]$), of which approached significance.

Study 1: Discussion

In one of the first of its kind, Study 1 sought to examine the relationships between self-perceived vulnerability to future victimization, personality traits, and nonverbal behaviours beyond gait. Specifically, the purpose of the present study was threefold: 1) to establish the relations between vulnerability to future victimization, and assertive and submissive personality traits; 2) to determine the relationships between nonverbal behaviours, and assertive and submissive personality traits; and 3) to examine the associations between vulnerability to future victimization and nonverbal behaviours.

Personality and Vulnerability

Over the past few decades, a considerable amount of research has been conducted in attempts to understand the underlying mechanisms of initial victimization and revictimization; in particular, researchers have sought to examine how factors such as gender, personality traits, nonverbal behaviours, and substance abuse may influence one's likelihood of being victimized or exploited by others. By no means is this research intended to place blame on victims in any sense, but rather it has been conducted with the intent of fostering a sense of empowerment by helping to build the skills necessary to hold autonomy over one's future in social interactions, when one may have otherwise felt anxiety, discomfort or worry. Through this line of inquiry, a number of personality and

related factors have been identified as correlates of past victimization, which in many cases may act as risk factors for future (re)victimization including decreased levels of assertiveness (Classen et al., 2001; Corbin et al., 2001; Greene & Navarro, 1998; Myers et al., 1984), appearing introverted (Wolff, 1943), increased levels of submissiveness (Beauregard et al., 2007; Selkin, 1978) and anxiousness (Selkin, 1978), low self-esteem/confidence (Goetz et al., 2012; Myers et al., 1984; Selkin, 1978), appearing as an “easy” target (Goetz et al., 2012; Stevens, 1994), and engaging in social avoidance (Classen et al., 2001) and nurturing behaviours (Classen et al., 2001; Stevens, 1994).

Sexual violence in particular, is highly prevalent in women. In a study of 3187 university students, Brecklin (2004) noted that 57% of women reported being victims of childhood sexual abuse (<14 years old; Brecklin, 2004). These numbers transcend into adulthood, where some studies have found that between 53.5% to 58.7% of women have experienced some form of sexual victimization beyond the age of 14 (Brecklin, 2004; Senn et al., 2014). While the personality traits of victims of sexual violence map onto those identified above, that is, victims of sexual violence are less likely to be sexually assertive (Greene & Navarro, 1998; Livingston et al., 2007; VanZile-Tamsen et al., 2005) and may be socially avoidant (Classen et al., 2001), the personality traits of female victims of nonsexual violence has garnered limited empirical attention. As such, with the first research question inquiring how assertive and submissive personality traits relate to self-perceived vulnerability to future victimization, it was hypothesized that low levels of assertiveness would be related to greater perceived vulnerability to sexual victimization, while high levels of submissiveness would demonstrate a positive relationship, such that higher levels of submissiveness would be associated with greater perceived sexual

vulnerability. As predicted, assertiveness was negatively related to ratings on sexual vulnerability, which parallels past research indicating that women who have experienced sexual violence are more likely to have difficulties being sexually assertive (e.g., Classen et al., 2001; Corbin et al., 2011; Greene & Navarro, 1998; Livingston et al., 2007; VanZile-Tamsen et al., 2005).

Both assertive and submissive personality traits were unrelated to self-perceived vulnerability to violent victimization. Considering that the sample consisted of only women, this finding is not altogether unexpected as women may see the actions of being mugged, hit, or physically attacked as being less likely to occur than sexual assault. In addition to this gendered aspect of sexual violence, participants were first- and second-year university students; evidence suggests that college-aged women are the most at risk group for sexual victimization, with approximately 20% reporting being victims of sexual assault during their undergraduate degree (Fuller et al., 2017; Muehlenhard et al., 2017). Accordingly, with the increased awareness of sexual violence on campus, sexual vulnerability may have been a more salient concern over nonsexual vulnerability given the age and educational status of the sample.

Counter to what was predicted however, submissiveness was unrelated to sexual vulnerability ratings. On one hand, this is in alignment with Blaskovitz and Bennell (2019) finding that submissiveness is unrelated to past sexual or violent victimization. On the other hand, other researchers have noted that submissiveness is associated with past victimization (e.g., Beauregard et al., 2007; Ritchie, 2016; Stevens, 1994). As assertive and submissive personality traits are related, but measure separate constructs where assertiveness corresponds to social or communication skills (e.g., being able to stand up

for oneself, responding boldly, expressing feelings/beliefs appropriately) while submissiveness is related to compliance or conformity (e.g., following the status quo/authority), it is reasonable to surmise that different patterns of results may emerge between the two personality traits. This being said, the aforementioned research has considered submissiveness in those who have previously experienced victimization; as the present study is solely looking at perceived vulnerability to future victimization, perhaps submissiveness is not a central component to vulnerability until after an incidence of victimization occurs. It is plausible that submissiveness may be primarily expressed in overt behavioural cues that others are able to decipher and recognize as cues of vulnerability for exploitation, while assertiveness may be primarily expressed and readily recognized as a more vocal trait. Ergo, if assertiveness is more so related to verbal expressions, then regardless of victimization history, individuals who perceive themselves as not being assertive may equate this to increased levels of vulnerability due to feelings of powerlessness, or a lack of ability to stand up for or protect oneself (Finkelhor & Browne, 1985; Myers et al., 1984).

Alternatively, if submissiveness is associated with nonverbal expressions, then individuals may not perceive themselves as vulnerable until an incidence of victimization occurs. Given that many intervention and treatment programs targeted at youth, victims, and women incorporate assertiveness training into their regime, while ‘anti-submissive’ or ‘dominance training’ is seemingly non-existent, the primary expression of assertive versus submissive personality traits as identified here, is promising. Moreover, if assertiveness being primarily verbal while submissiveness being predominantly nonverbal were to be true, then submissive and assertive personality traits may show

differences in the manifestation of nonverbal behaviours. Certainly, in addition to identifying personality traits relevant to vulnerability and victimization, to generate effective intervention strategies against potential victimization, it would equally important to consider how each personality trait is independently related to nonverbal cues.

Personality, Nonverbal Behaviours and Vulnerability

With research to suggest that personality traits are important indicators of victimization and that nonverbal behaviours (e.g., gait) may play an important role in victim selection and/or identifying vulnerability in others, this study also sought to explore the behavioural patterns of both individuals with assertive or submissive personality traits, and those who self-perceive as vulnerable to victimization. To capture behaviours beyond gait, daters remained seated throughout their video-recording so that body language and direct, observable behaviours (e.g., body-crossing, smiling, hand/arm movements, self-touch) could be recorded and assessed.

Results indicated that submissive individuals engaged in more self-touch and at least to a marginal extent, may not have appeared as animated (e.g., expressive; $p < .10$) or engaged in conversation ($p < .10$) than their lower scoring (or more dominant) counterparts. Although this is in alignment with past research indicating that submissive individuals appear calmer and are more likely to sit still (Richards et al., 1991), while dominant individuals are more likely to appear unrelaxed, shift in their seats and engage in infrequent acts of self-touching (Hall et al., 2005), in the present study, submissive individuals were also less likely to laugh, which is in opposition with Hall and colleagues (2005) finding that dominance is related to less smiling. Notably, this study also

examined smiling behaviours and found no relation with either assertive or submissive personality traits, which would correspond with Hall et al. (2005). Though it would have been reasonable to assume that an increase of laughing in submissive individuals may have equated to nervousness or anxiety, decreased levels are more difficult to rationalize. This said, it is possible that nervousness and/or anxiety did play a role, and actually hampered the ability of submissive individuals to find light and/or humor while being videotaped.

Given the highly correlated nature of assertive and submissive personality traits (e.g., $r = -.75$), it was expected that similar behavioural patterns, albeit in opposite directions, of the two would occur. While this held true for animation and self-touch, that is individuals low in assertiveness were less likely to appear animated but more likely to engage in self-touch, assertiveness did not demonstrate any significant relationships with smiling, or engagement. Certainly, it is possible that due to the small sample size, a Type-II error may have occurred making some relationships between personality and behaviours undetectable, these findings suggest that although similar, assertiveness and submissiveness may present in different behavioural patterns, which provides further support for the primary indicators of each personality trait being different (i.e., verbal versus nonverbal, respectively). Similarly, while it was predicted that submissive and assertive personality traits would be related to body-crossing behaviours, this went unsupported. Given that assertiveness has not explicitly shown relations with such movements but rather, has been inferred due to its relationship with submissiveness, this finding may not be altogether surprising, especially if assertiveness were to be more related to verbal rather than nonverbal cues.

Congruently, researchers have identified that submissive individuals engage in body-wrapping behaviours (e.g., Fetterman et al., 2015; Richards et al., 1991), so the nonrelation between body-crossing and submissiveness within the present study was unexpected. One explanation that has been put forth for body-crossing behaviours may be body boundary. That is, individuals with ambiguous or undefined body boundaries may seek to compensate by partaking in behaviours or dressing in ways that may make them feel protected against vulnerability or infringements of their personal space (Fisher, 1973, 1986). With this in mind, Richards and McAlister (1994) sought to examine if the behavioural and clothing differences (e.g., expansiveness of behaviours, concealing clothing) found within dominant versus submissive personality types may be explained by body boundary. Results indicated that there was no difference in body boundary between submissive versus dominant individuals, leaving the researchers to surmise that differences may be due to some other unidentified variable (Richards & McAlister, 1994).

Although there has since been limited empirical study exploring the potential explanation for differences in behavioural patterns between dominant and submissive individuals, one study did find that compared to controls, when arm-crossing was induced, people endorsed greater feelings of submissiveness and were more likely to engage in escape or defensive avoidance techniques when presented with a scenario involving potential physical harm (Fetterman et al., 2015). Not only is this in alignment with the notion presented in this paper, that submissiveness may be primarily expressed via nonverbal behaviours, but may also provide preliminary support that some behaviours may be more relevant or occur in situations where someone feels as though they are

unsafe or in harm's way and need an extra layer of protection. Ergo, in the present study it is possible that submissive women did not feel as though they were in danger and as such, did not feel the need to engage in arm-crossing or other body-wrapping behaviours.

As previously mentioned, there is ample data to suggest that victims of sexual and violent crime demonstrate similar personality traits and/or behaviours. Therefore, it is logical that those who self-identified as vulnerable to sexual or violent victimization displayed similar behaviours to those who identified as either submissive or unassertive. Specifically, those reporting as vulnerable to sexual victimization were marginally more likely to engage in acts of self-touch ($p < .10$) and those feeling vulnerable to violence appeared marginally more engaged in conversation ($p < .10$), then those reporting as invulnerable to sexual and violent victimization. Interestingly however, while assertive and submissive personality traits were unrelated to both direct and indirect gaze, sexual vulnerability was related to gaze aversion (i.e., indirect gaze). This finding is in alignment with sexual offenders stating they often choose targets who look like "easy prey", with gaze aversion being cited as a prime indicator of such (Stevens, 1994).

Moreover, in opposition to what was hypothesized, but congruent with findings related to assertive and submissive personality, arm-crossing and smiling behaviours were not exhibited more frequently in those self-identifying as vulnerable to sexual or violent victimization. With regards to the former, this again may be attributable to feelings of safety or a lack of imminent harm. This said, violent vulnerability was highly correlated with engaging in foot crossing behaviours, suggesting a moderate engagement in self-protection practices for a type of victimization that, in the eyes of a woman, may not be considered the most significant form of victimization and as such, may inherently

create more unease, regardless of personality type. Per the latter, as smiling has been cited as a method of victim selection in offender literature (e.g., Beauregard et al., 2007), it is certainly within the realm of reason that smiling behaviours are not an indication of vulnerability or personality per se, but rather a misinterpretation of signals, such that one may misperceive a smile as a token of interest rather than friendliness. This is corroborated by data that suggests smiling is a flirting or mating cue often exhibited by women during courtship (Moore; 1985; Moore & Butler, 1989). Overall, these results highlight that certain behaviours and/or personality traits are more prevalent within specific forms of vulnerability/victimization, at least from one's own perspective, and may highlight necessary avenues of research and/or insight into formulating appropriate and effective intervention strategies.

Limitations

While Study 1 demonstrates a number of strengths such as being one of the first of its kind in the examination of nonverbal behaviours beyond that of gait, using both assertive and submissive personality traits within its analysis, and focusing on perceived vulnerability to future victimization rather than victimization history, it is certainly not without its limitations. First, although the RAS is a commonly used measure to assess assertiveness and has demonstrated good psychometric properties (e.g., Caballo et al., 2014; Gustafson, 1992; Rathus, 1973), in the current study, internal consistency for low RAS daters was below acceptable (i.e., $\alpha = .49$). A potential explanation for this could be that there are multiple forms/ contexts in which one may be assertive and as such, low assertive daters were inconsistent with their responses as a reflection of this. For example, one low in assertiveness may agree with the statement, "I have hesitated to

make or accept dates because of ‘shyness’.”, but then disagree with the statement, “if a close and respected relative were annoying me, I would smother my feelings rather than express my annoyance.”. Simply put, poor internal consistency ratings for low RAS daters may have occurred due to the RAS measuring assertiveness as a unidimensional rather than a multidimensional construct.

Second, key behaviours such as hand movements, head movements and fidgeting were not included in analyses due to low IRR, and although eye gaze (i.e., ahead, away) was included, it demonstrated similarly low ratings. Although it is suspected that grainy video quality and/or distance may have accounted for the discrepancy in ratings of eye gaze, it is possible that other items may have overlapped with head, hand, and fidgeting behaviours (e.g., fidgeting versus self-touch), perhaps confusing raters. In the present study, average ratings were computed to offset any potential rater bias, however, future researchers may find benefit in utilizing consensus ratings when there is disagreement among raters, where when disagreement occurs, raters come together to form an agreed upon rating.

Third, despite some researchers using similar sample sizes (e.g., Blaskovits & Bennell, 2019; Fulham et al., 2017), a sample size of 40 may limit the power to identify significant differences, that is, the probability of obtaining a Type-II error is enhanced. Subsequently, it is a very salient possibility that given the relatively small sample size of the current study, the relationships between some nonverbal behaviours and both personality traits and vulnerability ratings went undetected. Further, small sample sizes may inhibit the generalizability of findings. This may be demonstrated within the wide confidence bands found within many of the significant correlations; with increased

sample sizes, standard error and variance decrease, generating a more reliable representation of the population.

Generalizability concerns may be further compounded given the sample demographics. Notably, all participants were women, with the majority identifying as Caucasian in their early 20's. Therefore, the current findings may not extend to folks of other genders, ethnicities, or age groups. Along a similar vein, given the low response rate of violent victimization ($M = 38.03$, $SD = 24.90$, range = 4 to 90), findings may also not generalize to those who perceive themselves vulnerable to victimization types other than sexual. This being said, sexual vulnerability demonstrated similar descriptive patterns (i.e., $M = 46.95$, $SD = 27.45$, range = 4 to 100), while still exhibiting significant relationships with personality variables and nonverbal behaviours. As previously mentioned, this may be due to sexual victimization being a gendered form of violence and as there were no male participants, nonsexual violence may have not been a prominent concern for participants.

Finally, while cross-sectional research provides many advantages over longitudinal research including cost and time efficiency, it is not without its disadvantages. Using a cross-sectional methodology impedes the ability to determine causal relationships, which overtly may not present as a concern for the current study, but temporal precedence, a requirement of causality, is certainly of concern and interest. By utilizing a cross-sectional approach, we are unable to determine if behaviours precede personality, or if personality precedes behaviour. That is, we are unable to see if engaging in certain behaviours fosters a sense of submissiveness and/or a lack of assertiveness, or if certain behaviours are just inherent to those with these personality traits. Further, by

collecting data at one time point, we miss how dynamic factors such as mood may impact response styles; participants may respond differently to perceived vulnerability depending on if they are feeling happy, sad, angry, anxious, or content, for example.

Implications and Future Directions

This research suggests that assertiveness is associated with self-perceived feelings of vulnerability to future victimization, that is, women with lower levels of assertiveness felt that they were more vulnerable to sexual victimization than their higher scoring counterparts. While it is important to reiterate that this research is not designed to place any blame on victims of sexual and/or violent assault, it is equally important to recognize that survivors may face many adverse reactions, feelings, or disadvantages as a result of their victimization, of which should be appropriately addressed. Certainly, research has demonstrated that as a result of victimization, survivors may engage in avoidance-type behaviours, have increased levels of anxiety, distress and depression, and have an external locus of control, such that they may feel that they are unable to act upon their own volition and rather must behave in accordance to how he/she believes others expect of them (Classen et al., 2001; Goetz et al., 2012; Myers et al., 1984; Selkin, 1978).

With research to suggest that sexual assertiveness reduces the risk for sexual exploitation and assault (Brecklin & Ulman, 2005; Greene & Navarro, 1998; Simpson Rowe et al., 2015; Simpson Rowe et al., 2012), it would be appropriate to implement workshops targeted at increasing assertiveness in women. Historically, assertiveness training has reduced levels of anxiety and helplessness, and increased self-efficacy, and awareness and detection of situation relevant cues unique to sexual victimization, and ultimately, helps curb sexual (re)victimization (Brecklin, 2004; Lidsker, 1991; Simpson

Rowe et al., 2012; Simpson Rowe, et al., 2015; Weitlauf et al., 2000). Importantly, victimization need not occur, nor does one have to be a woman in order to partake in assertiveness or behavioural training. Rather, it would be beneficial for folks of all demographics to engage in assertiveness building programs to encourage the development of positive self-esteem and emotions, self-efficacy, autonomy (e.g., internal control), and boundary setting; preventing victimization may fall as a secondary outcome of such programs.

Further, despite small sample sizes, both personality variables were significantly related to self-touching behaviours to a large effect, while sexual vulnerability demonstrated marginal relations ($p < .10$), in women. With evidence to suggest that self-defense training decreases negative expressions (e.g., spineless or gullible), and increases feelings of physical and general self-efficacy (Brecklin, 2004; Weitlauf et al., 2000), it may be fitting to implement behaviour specific intervention programs. Specifically, body language training targeted at self-touch or eye gaze may prove to be an incredibly fruitful endeavor for those who feel vulnerable to sexual victimization or feel as if they are lacking in assertiveness.

It would be valuable, however, for future research to include men in the assessment of vulnerability. With this, we may find that personality traits vary by a function of both gender and victimization type (e.g., men versus women, sexual versus violent). While it would be understandable to assume that men may rate themselves as most vulnerable to violent victimization, it would be important to see which personality traits and/or nonverbal behaviours are most relevant in males who self-perceive as being vulnerable to victimization. In discovering this, clinicians, parents, regulatory agencies,

and the like would be better equipped in the development and implementation of gender and context specific training and intervention programs. Further, considering that this research may suggest a fundamental difference between assertiveness and submissiveness, at least in the context of women reporting vulnerable to sexual victimization, researchers may consider conducting a similar study using a longitudinal platform to determine how personality traits, nonverbal behaviours, and vulnerability may express overtime, and pre- and post-victimization. This would be helpful in providing a more causal versus correlational understanding of vulnerability and victimization.

With regards to nonverbal behaviours, future researchers may find benefit in employing an observational methodology in attempts to generate realistic and natural behaviour in its participants. While the current research provides preliminary support for how nonverbal behaviours are expressed by those with assertive and submissive personality traits, as well as those who self-report as being vulnerable to victimization, it is certainly plausible (and expected) that participants would act differently if they did not know they were being video-recorded, or if they were immersed in a more natural environment. Indeed, there is research to suggest that awareness or hypervigilance may decrease vulnerability cues (e.g., Fulham et al., 2017; Johnston et al., 2004). Consequently, given that daters were aware they were being filmed and subsequently may have inadvertently or intentionally inhibited certain behaviours, future research should covertly observe/record the interactions of target participants meeting a confederate, or the like, for the first time. Alternatively, future research may find benefit in increasing the stress level of participants or utilizing a behaviour induction procedure

(e.g., make participants self-touch, arm-cross) to see how stress or engaging in certain behaviours relates to feelings of vulnerability pre-and post-induction.

Conclusion

Overall, Study 1 provides further support that assertiveness is a key personality variable in women who feel they may be vulnerable to sexual victimization. Study 1 also provides preliminary evidence that at their core, assertive and submissive personality traits may differ by means of how they are primarily expressed, which globally, may impact both self-impressions and other's perceptions of vulnerability. Although further research is needed to corroborate the findings of Study 1 to ensure reliability, the results indicate a repertoire of behaviours that may be indicative of vulnerability, including eye gaze, self-touch, and lacking in animation and engagement in conversation. With data to suggest that behaviour and personality are malleable features (e.g., Fulham et al., 2017; Simpson Rowe, et al., 2015; Weitlauf et al., 2000), Study 1 provides support for different behavioural and personality interventions that may be beneficial in increasing positive feelings related to self-efficacy, esteem, and autonomy that may aid with reductions in feelings of vulnerability, and may act as a stepping stone in the prevention of (sexual) victimization.

Study 2: Purpose

The literature surrounding victim selection has indicated that personality traits and behavioural patterns are often cited as being key determinants during the victim selection process (e.g., Beauregard et al., 2007; Stevens, 1994). This is understandable provided that previously victimized individuals tend to demonstrate distinctive nonverbal behaviours (e.g., downward gaze, unilateral gait; Grayson & Stein, 1981; Parks et al.,

2008) and share common personality traits (e.g., submissiveness; Richards et al., 1991; Selkin, 1978). Considering that the dark personality types, particularly individuals with psychopathic traits, engage in high frequencies of manipulating, deceiving and discriminating others, it stands to reason these individuals would be proficient when identifying which individuals would be most susceptible for future victimization. Previous research has corroborated this notion and has demonstrated that those high in psychopathic traits show an adeptness at identifying previously victimized individuals (Book et al., 2013; Denardo et al., 2018; Ritchie et al., 2019).

Much of the victim selection literature has largely considered psychopathy and gait, while research considering other nonverbal cues and dark personality traits is lacking. That being said, one study previously demonstrated that of the Dark Tetrad traits, psychopathy was the most accurate when identifying previous victims, and that having sadistic, Machiavellian, and/or narcissistic traits present in conjunction with psychopathic traits did not significantly increase this accuracy (Ritchie et al., 2019). The present study then, sought to close the empirical gap by providing insight into other nonverbal cues that may be identified and utilized by dark personality types during assessments of vulnerability. A second goal of the present study was to examine how dark traits affect the perceptions of vulnerability in others.

Research Question 1: Are individuals scoring higher on psychopathy able to correctly identify individuals who self-report as being vulnerable to sexual and/or violent victimization⁴?

⁴ As indicated in Study 1, violent victimization refers to nonsexual acts of violence.

Previous research has indicated that psychopathy is associated with accuracy in identifying previously victimized individuals (e.g., Book et al., 2013, Denardo et al., 2018; Ritchie et al., 2019; Wheeler et al., 2009). In particular, higher psychopathy total and factor 1 (affective and interpersonal traits) scores have demonstrated the strongest relationship with accuracy in classifying victims and nonvictims (Book et al., 2013; Wheeler et al., 2009). Research regarding the accuracy in which psychopathy is related to victim identification is mixed, however. For example, one study found that psychopathy scores were not significantly associated with accuracy in identifying victims (i.e., Black et al., 2014), while another study indicated that Factor 2 (lifestyle and antisocial traits) and not Factor 1 scores were responsible for identification accuracy (i.e., Ritchie et al., 2018). Denardo et al. (2018) demonstrated similar results to the latter study in which both psychopathy total and Factor 2 scores were associated with victim identification accuracy. Further, Ritchie (2016) noted that psychopathy was associated with accuracy of recognizing vulnerability to violent victimization, but not for sexual victimization in others. Along the same vein, Wheeler et al. (2009) noted that psychopathy total and Factor 1 scores were able to correctly identify vulnerability to general (e.g., mugging) victimization.

Hypothesis 1: I hypothesized that psychopathy total scores would be associated with identifying sexual and violent vulnerability, and Factor 2 scores would be associated with accuracy in identifying violent vulnerability.

Research Question 2: How do observer personality traits/construct (e.g., Dark Tetrad, honesty-humility) affect the accuracy in which victim vulnerability is detected? What personality construct/ trait (e.g., psychopathy, sadism, narcissism,

Machiavellianism, honesty-humility) is most salient in detecting those who have self-identified as being vulnerable to future victimization?

Research within the last decade has demonstrated that psychopathy is associated with accuracy in identifying both past victimization and vulnerability to future victimization (e.g., Book et al., 2013; Denardo et al., 2018; Ritchie et al., 2019; Wheeler et al., 2009). Considering that by and large, the Dark Tetrad traits have shown moderate to strong correlations with one another (e.g., Porter et al., 2014; Ritchie, 2016), it is reasonable to assume that the remainder of the dark traits (e.g., everyday sadism, Machiavellianism, narcissism) would fare equally well in identifying vulnerability and past victimization. Indeed, Machiavellianism and every sadism have demonstrated associations with increased accuracy in identifying both victimization and vulnerability to victimization (e.g., Ritchie, 2016; Ritchie et al., 2019). Notably however, neither Machiavellianism nor everyday sadism significantly added to identification accuracy above psychopathy (Ritchie, 2016; Ritchie et al., 2019). Of note to the present study, results from Ritchie (2016) also indicated that the honesty-humility dimension of the HEXACO was related to identifying vulnerability in others.

Hypothesis 2: I predicted that Machiavellianism, everyday sadism, and the HEXACO honesty-humility dimension would be associated with accuracy in identifying victim vulnerability for both sexual and violent victimization.

Hypothesis 3: I hypothesized that psychopathy would demonstrate to be the most salient predictor of victim vulnerability of both sexual and violent victimization.

Research Question 3: How does observer personality traits/constructs (i.e., psychopathy, Machiavellianism, honesty-humility) impact how vulnerability is perceived in others?

As previously mentioned, there is an abundance of evidence to indicate that psychopathy is associated with increased accuracy in identifying previous victims and/ or vulnerability in others (Book et al., 2013, Denardo et al., 2018; Ritchie et al., 2019; Wheeler et al., 2009). Interestingly, however, in a study conducted by Black and colleagues (2014), individuals high on the Dark Triad were not more accurate in identifying vulnerability, but rather viewed everyone as vulnerable or weak. Further, when solely considering psychopathy and Machiavellianism, Brankley and Rule (2014) found that while individuals with psychopathic traits were more likely to view others as unthreatening, this effect was not demonstrated with Machiavellianism.

Hypothesis 4: Given the mixed literature regarding the Dark Tetrad's perceptions of vulnerability in others, in conjunction with psychopathy and sadism being highly correlated with one another, I predicted that individuals scoring higher on psychopathy and sadism would perceive others as more vulnerable to both sexual and violent victimization.

Research Question 4: Are perceived dater personality traits (e.g., submissiveness, assertiveness) associated with perceived vulnerability to future victimization (i.e., sexual, violent)?

Previous research has indicated that vulnerability is related to lower levels of assertiveness and confidence, and heightened levels of submissiveness, anxiety, depression, and extraversion, specifically in relation to sexual vulnerability and

victimization (Beauregard et al., 2007; Blaskovitz & Bennell 2019; Corbin et al., 2001; Goetz et al., 2012; Greene & Navarro, 1998; Ritchie, 2016; Selkin, 1982). And although limited, researchers have identified multiple personality cues that sexual offenders have cited actively looking for when selecting their victims, namely naivety, nurturance (e.g., caring/affectionate), and extraverted behaviours (e.g., smiling; Beauregard et al., 2007; Stevens, 1994).

Hypothesis 5: I hypothesized that daters perceived as more vulnerable to sexual victimization will be perceived as lacking assertiveness and confidence while simultaneously appearing submissive, anxious and nurturing or naïve. Alternatively, given the lack of empirical evidence on the (perceived) personality traits of female victims of (nonsexual) violence, how personality traits vary by a function of violent vulnerability was exploratory.

Research Question 5: Do the personality traits/constructs (e.g., Dark Tetrad, honesty-humility) of observers impact the proportion of nonverbal behavioural cues mentioned during the appraisal of victim vulnerability? Does perceived vulnerability for different types of victimization (i.e., sexual, violent) impact what nonverbal behavioural cues are utilized during the decision-making process?

With evidence to suggest that psychopathy and the remainder of the dark traits are associated with increased accuracy in identifying both past victimization and vulnerability for future victimization (e.g., Book et al., 2013, Denardo et al., 2018; Ritchie et al., 2019; Wheeler et al., 2009), it is logical that researchers have explored the potential mechanisms the dark traits may employ when assessing victim vulnerability. Notably, much research in this area has focused on utilizing vulnerable gait patterns to

assess vulnerability, the findings of which, have been mixed. Some research, for example, has noted that although accurate in their vulnerability assessments, university students scoring higher on psychopathy are either not able to articulate what information they based their decisions on or did not cite utilizing vulnerable gait cues (e.g., Ritchie, 2016; Wheeler et al., 2009). Contrary to this, Book et al. (2013) found that inmates scoring higher on Factor 1 (affective and interpersonal traits) scores significantly indicated utilizing vulnerable gait cues to identify vulnerability in others. The authors suggest the difference between the latter and former studies may occur because of the ‘practice’ inmates may have over university students in the detection and extortion of vulnerability in others (Book et al., 2013).

Hypothesis 6: As research considering how personality traits (e.g., Dark Tetrad) in observers associate with the use of nonverbal behaviours during the appraisal of victim vulnerability is mixed and limited, these analyses were exploratory in nature.

Hypothesis 7: Given that the literature on how nonverbal cues are utilized as a whole during the assessment of perceived vulnerability for different types of victimization (i.e., sexual, violent) is mixed, these analyses were exploratory in nature.

Study 2: Method

Participants

Following ethical approval, 602 undergraduate students enrolled to participate within the present study. Notably however, participants were removed from analyses for taking less than 15 minutes or more than 2.5 hours to complete the study (30.4%, $N = 183$), not completing the video portion of the study (e.g., not completing all eight videos or failing to provide vulnerability ratings; 10.3%, $N = 62$), not completing the study or

having poor data quality (e.g., selecting “3” for every question; 3.5%, $N = 21$), failing at least one of the two attention checks (2.5%, $N = 15$), and finally, two participants (0.3%) did not consent to participate. The final sample consisted of 319 participants, with a mean age of 20.24 ($SD = 3.64$; range = 17 – 48). The majority of participants identified as female (66.7%; male = 31.1%; non-binary = 1%; transgender = 0.3%; genderfluid = 0.3%), of Caucasian descent (59.5%), followed by Asian (18.1%), Black (8.7%), Arab (6.1%), mixed (2.6%), Native American (2.6%), Latin American (1.6%), and “other” including West Asian, South East Asian, Northern European, North Asian, Indo Caribbean, Guyanese, Filipino, and Jewish (2.9%). Informed consent was obtained from each participant prior to participation and upon completion of the study, each participant (excluding those who did not consent to participate) was debriefed and awarded 0.5% course credit.

Measures

Demographic Questionnaire

Participants (herein known as “observers”) were asked three questions related to their basic demographic information (i.e., age, gender, and race/ethnicity).

SRP 4:SF

The Self-Report Psychopathy Scale 4th Edition: Short Form (SRP 4:SF; Paulhus, Neumann, et al., 2016) is a 29-item self-report questionnaire aimed at assessing the degree to which an individual possesses psychopathic traits in community, university, and offender samples (research settings recommended). Participants respond to all items (e.g., “I’m a rebellious person”) using a 5-point Likert scale ranging from 1 (“*strongly disagree*”) to 5 (“*strongly agree*”). The SRP 4:SF’s structure models the PCL-R in that its

total score breaks down in to two factors (i.e., Factor 1 and Factor 2), as well as four facets (i.e., affective, interpersonal, lifestyle, antisocial). Factor 1 scores comprise of affective and interpersonal traits, while Factor 2 scores comprise of lifestyle and antisocial traits. All scores can be summed to include the total, factor, and facet scores. In the event that an item is missing or omitted, the authors recommend prorating the scores by multiplying the obtained raw score by the total number of items on the scale and dividing that by the total number of items on the scale *with* responses. That said, to be considered reliable, no more than 10% of responses should be considered omitted (Paulhus, Neumann, et al., 2016).

The SRP 4:SF has demonstrated strong internal consistency (Cronbach's alpha) ranging from .89 to .92 in community, university, and offender samples, and has shown good internal consistency for factors, facets and total score (*rs* ranging from .71 to .87; Seara-Cardoso et al., 2019), and test-retest reliability in both total score ($r = .82$) and facet scores (ranging from $r = .70$ to .85; Paulhus, Neumann, et al., 2016). The SRP 4:SF has also demonstrated good construct, convergent, discriminant and predictive validity (Paulhus, Neumann, et al., 2016; Hicklin & Widiger, 2005; Seara-Cardoso et al., 2019; Williams & Paulhus, 2004).

Short Dark Tetrad

The Short Dark Tetrad (SD4; Paulhus et al., 2018; Appendix L) is a 28-item self-report questionnaire used to assess subclinical levels of Machiavellianism, narcissism, psychopathy, and sadism. Comprised of four subscales (i.e., "Crafty" aka Machiavellianism, "Special" aka narcissism, "Wild" aka psychopathy, "Mean" aka sadism), participants respond to each item (e.g., "It's not wise to let people know your

secrets”) using a 5-point Likert scale ranging from 1 (“*strongly disagree*”) to 5 (“*strongly agree*”), with higher scores indicating greater levels of the dark traits.

The SD4 has been normed for use in university populations and each subscale has shown acceptable to good alpha reliabilities ranging from .76 (Machiavellianism) to .81 (sadism; Paulhus et al., 2018). The SD4 is derived from the Short Dark Triad (SD3; Jones & Paulhus, 2014), which is a self-report measure used to assess subclinical levels of Machiavellianism, psychopathy and narcissism. The SD3 has demonstrated good concurrent validity with Dirty Dozen (Jonason & Webster, 2010), the Self-Report Psychopathy Scale – III (Paulhus, Hemphill & Hare, 2016), the Mach-IV (Christie & Geis, 1970), the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979), and the Interpersonality Item Pool – Interpersonal Complex (Markey & Markey, 2009), and has demonstrated acceptable reliability and validity (Jones & Paulhus, 2014).

HEXACO-60

The HEXACO-60 (Ashton & Lee, 2009; Appendix B) is a 60-item self-report questionnaire used to access six personality facets: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to experience. For a detailed description of the HEXACO-60, see Study 1.

CAST

The Comprehensive Assessment of Sadistic Tendencies (CAST; Buckels & Paulhus, 2013; Appendix M) is an 18-item self-report questionnaire used to assess everyday sadism, or subclinical levels of sadistic traits. Comprised of three subscales, direct – verbal, direct – physical, and vicarious, participants respond to each item (e.g., “I enjoy physically hurting people”) using a 5-point Likert scale ranging from 1 (“*strongly*

disagree”) to 5 (“*strongly agree*”), where higher scores indicate a greater degree of sadistic traits/ sub-traits.

The CAST has demonstrated good convergent validity with psychopathy, narcissism, Machiavellianism, and trait aggression (i.e., physical, verbal, anger, hostility; Buckels, 2018), and has good internal consistency (Cronbach’s α ranges from .72 to .89; Buckels, 2018; Buckels et al., 2018; Buckels et al., 2014).

FFMI

The Five Factor Machiavellianism Inventory (FFMI; Collison et al., 2018; Appendix N) is a 52-item self-report questionnaire used to assess Machiavellianism that has been validated within community populations (Collison et al., 2018). The FFMI is comprised of three subscales: antagonism (i.e., selfishness, immodesty, manipulative, callous, cynical), agency (i.e., achievement, activity, assertiveness, competence, self-confidence, invulnerable), and planfulness (i.e., deliberation, order). Participants respond to each item (e.g., “I view others as tools to be used and manipulated”) using a 5-point Likert scale ranging from 1 (“*strongly disagree*”) to 5 (“*strongly agree*”), with higher scores indicating a greater degree of Machiavellian traits.

Developed to create a more multi-dimensional assessment approach to assessing Machiavellianism, the FFMI has demonstrated moderate correlations to the MACH-IV ($r = .15$), and the Machiavellian subscales found within the SD3 ($r = .27$) and Dirty Dozen ($r = .23$; Jonason & Webster, 2010; Collison et al., 2018). Despite these correlations being significant, it is notable that they are small to moderate, to which Collison et al. (2018) attribute to the FFMI being designed as a measure of Machiavellianism that is distinguishable from measures of psychopathy. Importantly, the FFMI had a strong correlation to expert opinions of Machiavellianism ($r = .65$), which was not the case for

the existing measures of Machiavellianism which correlated more strongly with expert perceptions of narcissism and psychopathy (Collison et al., 2018).

NPI-16

The Narcissistic Personality Inventory-16 (NPI-16; Ames et al., 2006; Appendix O) is a 16-item pair self-report questionnaire used to assess subclinical levels of narcissism. Respondents are asked to read each pair of statements (i.e., “I really like to be the center of attention” versus “It makes me uncomfortable to be the center of attention”) and select which statement describes them best, with higher scores indicating higher levels of narcissism.

Developed to create a shorter measure of narcissism, the NPI-16 is a unidimensional tool that is highly correlated with its parent measure, the 40-item Narcissistic Personality Inventory ($r = .90, p < .001$; Ames et al., 2006). Further, in their five-part study, Ames et al. (2006) demonstrated that the NPI-16 has adequate internal consistency ($\alpha = .72$), good convergent validity with openness to experience (r s range from .24 to .32) extraversion (r s range from .36 to .41), self-esteem (r s range from .24 to .35) and self-monitoring ($r = .37$), and excellent test-retest reliability ($r = .85$).

Dater Videos

A subset of the dater videos recorded in Study 1, in which informed consent for future use of videos was indicated, were utilized. A total of eight videos were used for the current study, with four videos each depicting some of the lowest and highest scoring RAS daters, respectively. Specifically, at the time of data collection for the present study, the videos from the second, fourth, seventh and eighth lowest scoring daters and the first, third, fifth and sixth highest scoring daters on the RAS were utilized. All other extreme-

scoring videos were deemed ineligible due to dress (e.g., midriff showing) or potential identifiable information (e.g., name identification). Each video was approximately 45 seconds in length and did not contain audio.

Perceived Personality, Emotionality, and Vulnerability Questionnaire

The Perceived Personality, Emotionality, and Vulnerability Questionnaire (PPEVQ; see Appendix P) is an 18-item self-report questionnaire used to assess the daters perceived attractiveness, emotional (e.g., anxiety) and personality (e.g., extraversion) traits and the observer's perceptions of the corresponding dater's vulnerability to future sexual and violent victimization. In addition, observers are asked if the dater is known to them. This questionnaire was created for the purpose of this study and was adapted from Black et al. (2014), Ritchie (2016), and Wheeler (2010).

The first 14 items relate to the observer's perceptions of the dater's personality (e.g., extraversion, openness) and emotionality (e.g., anxiousness) traits. Here, observers are asked to respond to all questions (e.g., "This person is assertive") according to a 5-point Likert scale ranging from 1 ("*not true at all*") to 5 ("*completely true*"). In items 15a and b, observers are asked if they believe the daters are vulnerable to being victimized sexually or violently and are asked to indicate how they came to their decision(s). In the latter question, observers are given a series of options (e.g., I don't know, I guessed, physical characteristics, posture) to which they are told to indicate all that apply. Finally, items 17 and 18 ask observers to indicate if they knew the dater from the video (i.e., yes/no), and to rate the daters physical attractiveness on a scale from 1 ("*very unattractive*") to 7 ("*very attractive*"), respectively.

Operationalizing Dater Variables. Global impressions of perceived vulnerability and dater personality/ emotionality traits were calculated by averaging each relevant vulnerability rating or trait across all dater videos⁵, resulting in an aggregated trait score for each observer, where higher scores would indicate higher perceived dater vulnerability, personality, and emotionality. Accuracy ratings were generated employing a method utilized by Book et al. (2013). Specifically, absolute discrepancy values were created by subtracting observer vulnerability ratings from the respective daters' self-assessed vulnerability rating⁶, as indicated in Study 1, where smaller discrepancy values would be indicative of higher, or better accuracy.

Proportion of cues utilized was created by summing all cues (except "I don't know" or "I just knew it") indicated in each video and then by averaging this across all videos. The proportion of times each observer indicated the use of a specific cue (e.g., posture) was calculated by averaging each particular cue across all dater videos. For example, if an observer indicated using the dater's posture in four out of eight videos, a score of 0.5 would be created for that particular observer on use of posture in vulnerability assessments, where higher scores would indicate that a particular cue was utilized in the decision-making process more frequently. Next, both observer gender and dater attractiveness were operationalized to be included in follow-up analyses as control variables. As 1.6% ($N = 5$) of participants identified as a gender other than female or male, these five participants were recoded as "missing" creating a dichotomous gender

⁵ If an observer indicated they knew the dater from the video, that video was not included in generating impressions of vulnerability, personality, emotionality, attractiveness, or cues utilized during vulnerability appraisal as to avoid biased judgements. As such, the total number of videos used varied by observer, so average scores were utilized rather than the raw sum of each variable. In total, 89% ($N = 276$) of observers did not know any of the daters from the videos, 8% ($N = 25$) of observers knew one dater from the videos and 3% ($N = 8$) of observers knew two daters from the videos.

⁶ Both dater and observer assessments of vulnerability were made on the same scale ranging from 0 to 100.

variable, where females were coded as 0 and males were coded as 1. Finally, to retain variability in attractiveness ratings across all videos, the raw sum of attractiveness scores (rather than the average) was created for each observer.

Importantly, as the videos included within the present study were from four low and four high RAS daters as gathered from Study 1, there may be distinct differences in perceived vulnerability, personality, emotionality, and cues utilized between the two groups. As such, each variable discussed above was also generated for low and high RAS daters such that there would be an overall rating (i.e., across all videos), and a rating for low and high RAS daters. For example, sexual vulnerability ratings for low RAS daters was calculated by averaging the vulnerability ratings of all low RAS dater videos across each observer.

Attention Check

To assess for attention throughout the study, observers were randomly told to select either “disagree” or “strongly agree” two times throughout the study. Data from observers that incorrectly select the appropriate answer on at least one occasion were not analyzed.

Procedure

Although this study was open to any undergraduate student participating in SONA research, a recruitment notice was emailed to all students who scored within the top and bottom 25% of the SRP 4:SF to ensure a range of psychopathy scores were present within the current sample. Further, to ensure impartiality, those who previously participated in Study 1 were excluded from participating in Study 2. Students who were

interested in participating within the study signed up to take part in the online Qualtrics survey through the host institutions SONA portal.

Observers began their session by completing informed consent and once obtained, observers were informed that in the first part of the study, they would watch a series of short videos and immediately following each video, they would be prompted to answer a series of corresponding questions; observers were instructed to carefully watch each video to ensure accurate responses to the each of the follow-up questions. Observers viewed eight video clips, each roughly forty-five seconds in length, in randomized order. Following each video clip, observers were asked to complete the PPEVQ with regard to the person in the video. Once finished, observers then completed a demographic questionnaire, the SRP 4:SF, SD4, FFMI, NPI-16, CAST, and HEXACO-60, in randomized order. To safeguard against response bias, two attention checks were placed randomly throughout this part of the study. At completion, observers were provided with debriefing materials and course credit for their participation.

Study 2: Results

Data Management

Missing Data

Prior to analysis, data were first screened for missing values. Pre-screening, it was decided that for each observer personality measure (i.e., HEXACO-60, FFMI, NPI-16, CAST, SD4), only 5% missing data would be allowable, as if data demonstrated to be MCAR, EM imputation is only advisable with low missing data levels (Tabachnick & Fidell, 2013). Specifically, for the NPI-16 and CAST, one missing item was allowable for each participant, two missing items were allowable for the SD4, and up to three missing

items were allowable for the HEXACO-60 and FFMI. If a participant exceeded any missing item allowance, their corresponding personality measure was not utilized in subsequent analyses. This was not true for the SRP 4:SF however, as Paulhus, Neumann, et al. (2016) provide proration methods for up to 10% missing data on all facets, factors, and total score; as such, missing data imputation methods for the SRP 4:SF were unnecessary. Furthermore, any participant that fell beyond 10% missing data on any given Facet, Factor, or total score were not included in subsequent analyses.

Upon visual inspection of the data, one item was missing from the interpersonal and affect facets of the SRP 4:SF, and the vicarious subscale of the CAST; two items were missing among the psychopathy and sadism subscales of the SD4, and the NPI-16; three items were missing from the planfulness subscale of the FFMI; four items were missing from the honesty-humility and extraversion dimensions of the HEXACO-60; five items were missing from the affect facet of the SRP 4:SF; six items were missing from Factor 1 of the SRP 4:SF, the narcissism subscale of the SD4, and the conscientious dimension of the HEXACO-60; seven items were missing from the extraversion and openness dimension of the HEXACO-60, the Machiavellian subscale of the SD4, and the direct-physical subscale of the CAST; nine items were missing from the lifestyle facet of the SRP 4:SF and the agreeableness dimension of the HEXACO-60; 10 items were missing from Factor 2 of the SRP 4:SF; and 11 items were missing from the antagonism and agency subscales of the FFMI.

Among perceived personality traits of daters, across all eight videos, two items were missing from assertiveness; five items were missing from submissiveness; six items were missing from anxiousness; eight items were missing from extraversion; nine items

were missing from agreeableness, dominance, and naivety; 10 items were missing from nurturance; 11 items were missing from openness, confidence, appearing relaxed, and low self-esteem; 12 items were missing from warmth; and 20 items were missing from conscientiousness.

Finally, upon screening of missing data by participant, a total of 73 participants were missing at least one item. Notably, no participant was missing more than four items among all observer personality measures ($N = 2$), with the majority of participants missing one item ($N = 50$). Among the entirety of the study, including vulnerability and perceived dater traits, 143 participants were missing at least one item, with no participant missing more than 13 items ($N = 1$), and again, the majority of participants were only missing one or two items ($N = 75$ and $N = 42$, respectively).

Missing data were then screened for patterns of missingness using t -tests and chi-square⁷ analyses of key variables against age and gender, where all key variables with missing data were dummy coded such that 0 = completed and 1 = missing. Results for each t -test and chi-square were insignificant (i.e., $p > .05$), indicating that there was no relationship between age or gender of observers and missing data, suggesting that data are missing at random. As detailed in Study 1, Little's (1988) MCAR test was then conducted as a follow-up to determine if data were missing completely at random.

Little's MCAR was insignificant ($\chi^2 = 35993.096$, $df = 36762$, $p = .998$), suggesting that data were missing completely at random, indicating that EM methods for data imputation were appropriate (Tabachnick & Fidell, 2013). As such, missing data for observer

⁷ Some key variables had less than 5 missing data points for male and/or female observers, so for these variables, the assumption of at least 5 observations per cell was violated; however, with less than five missing datapoints, there are too few people to impact or bias estimates.

personality measures were imputed using EM methods, while missing data on dependent variables (e.g., vulnerability ratings), and perceived dater personality and emotionality traits were not imputed as to avoid drawing assumptions about observers' personal judgements.

Outliers

Next, data were screened for potential outliers by first visually inspecting boxplots of key variables and then by transforming each key variable into a z-score, where any datapoint falling beyond a z-score of ± 3.29 would be indicative of an extreme outlier (Field, 2013). Upon visual inspection of boxplots, a number of outliers were identified. Within the vulnerability domain, one potential outlier was observed on sexual accuracy of high RAS daters; two potential outliers were identified on overall violent vulnerability ratings; three potential outliers were observed among overall sexual vulnerability ratings, sexual vulnerability ratings of high RAS⁸ daters, and overall accuracy of violent vulnerability; four potential outliers were identified among violent vulnerability of high RAS daters; eight potential outliers were noted among sexual accuracy of low RAS⁹ daters; nine potential outliers were observed among overall accuracy of sexual vulnerability; and 10 potential outliers were identified in violent accuracy of low RAS daters.

Among key observer personality traits, one potential outlier was noted among conscientiousness and direct-verbal; two potential outliers were identified among Factor 1, Factor 2, agency, antagonism, narcissism (SD4), and psychopathy (SD4); three potential outliers were observed among honesty-humility, emotionality, extraversion,

⁸ High RAS = high assertive daters from Study 1 according to the Rathus Assertiveness Schedule.

⁹ Low RAS = low assertive daters from Study 1 according to the Rathus Assertiveness Schedule.

affect, FFMI total, and NPI-16 total; four potential outliers were identified on antisocial, SRP total, direct-physical, and CAST total; five potential outliers were noted on openness to experience; and nine potential outliers were identified on Machiavellianism (SD4).

Among perceived dater personality and emotionality traits, one potential outlier was observed in assertiveness, confidence, warmth, and agreeableness of low RAS daters, self-esteem in both low and high RAS daters, and overall assertiveness, openness, anxiousness, and nurturance; two potential outliers were noted in submissiveness, anxiousness, and openness of low RAS daters, agreeableness of high RAS daters, and overall agreeableness and confidence; three potential outliers were identified in submissiveness, extraversion and self-esteem of low RAS daters, submissiveness and nurturance in high RAS daters, and overall submissiveness, conscientiousness, and self-esteem; four potential outliers were identified among anxiousness of high RAS daters; five potential outliers were noted among submissiveness of high RAS daters and overall dominance; six potential outliers were identified in appearing relaxed overall and in low RAS daters; eight potential outliers were observed in assertiveness and dominance of high RAS daters, and dominance and nurturance in low and high RAS daters; nine potential outliers were identified among confidence of high RAS daters; 10 potential outliers were observed among overall extraversion and in high RAS daters, 14 potential outliers were identified among naivety in low and high RAS daters; and 19 potential outliers were noted among overall naivety.

Finally, among cues utilized during the decision making process, three potential outliers were observed among daters' dress in high RAS daters; six potential outliers were identified in using "I don't know" for low RAS daters; eight potential outliers were

noted in citing “I don’t know” in the high RAS group; 11 potential outliers were identified in selecting “I don’t know” overall, “I just knew it” in both the low and high RAS groups, and daters’ dress of low RAS daters; and 19 potential outliers were identified among the use of “I just knew it” overall.

Following this, inspection of z-scores indicated that while the volume of potential outliers decreased, a number of cases remained outliers (i.e., $z = \pm 3.29$) on overall sexual and violent accuracy (i.e., five and three outliers, respectively), sexual accuracy of low and high RAS daters (i.e., one and four outliers, respectively), and violent accuracy of low and high RAS daters (i.e., three and four outliers, respectively). Among observer personality traits, one outlier remained on affect, antisocial, honesty-humility, antagonism, and psychopathy (SD4) and three outliers remained on direct-physical and Machiavellianism (SD4). Similarly, among perceived dater personality and emotionality traits, one outlier remained among overall assertiveness, submissiveness, conscientiousness, confidence, extraversion, low self-esteem, and nurturance, in assertiveness, agreeableness, conscientiousness, warmth and nurturance of low RAS daters, and agreeableness, conscientiousness, extraversion, confidence, and appearing relaxed in high RAS daters, two outliers remained on submissiveness of high RAS daters and naivety of low RAS daters, and three outliers remained among overall naivety.

With regards to which nonverbal cues were utilized during vulnerability appraisal, seven outliers remained on the overall selection of daters’ dress and nine remained on the overall use of “I don’t know”. Provided that there were no unambiguous errors in data entry or unintended sampling, each outlier was changed to one score below or above the next highest or lowest score to reduce any effect it may have, while

maintaining its rank order. Following this, to ensure that each outlier had been reduced adequately, key variables with remaining outliers were again transformed into a z-score and in doing so, no datapoint fell beyond an acceptable range (i.e., $z\text{-score} = \pm 3.29$; Field, 2013).

Finally, multivariate outliers were assessed using Mahalanobis distance (for a detailed description, see Study 1). Ten cases exceeded the critical value of 89.27 ($p < .001$; $df = 52$), indicating that these ten cases are considered multivariate outliers. Following Tabachnick and Fidell (2013)'s recommendation of the removal of any multivariate outlier because it can be difficult to pinpoint the exact extent, area and nature of which they are outliers, these ten cases were removed from subsequent analyses ($N = 309$).

Normality and Homoscedasticity

While normality is not of great concern for large sample sizes (i.e., $N > 30$; Field, 2013), nor should the Kolmogorov-Smirnov and Shapiro-Wilks tests be employed large samples as marginal or inconsequential effects may appear significant (Field, 2013), due to the nature of computing an accuracy variable using data from two separate sources, accuracy ratings (i.e., overall and by low/high RAS daters) were screened for normality by visually inspecting P-P plots, Q-Q plots and histograms. Upon visual inspection, overall sexual and violent accuracy, and sexual and violent accuracy in high RAS daters appeared to have a moderate positive skew, while sexual accuracy in low RAS daters was noted to have a severe right skew. As such, each variable demonstrating a moderate positive skew was transformed utilizing a square root function, while sexual accuracy in low RAS daters was transformed with a logarithmic function. Q-Q plots, P-P plots and

histograms were again viewed for each variable post-transformation, to which all variables appeared normally distributed.

Linearity and heteroscedasticity were inspected utilizing plots of standardized residuals against predicted values for each dependent variable, to which the data appeared to be linear and homoscedastic.

Descriptive Statistics and Internal Consistency

For a list of descriptive statistics for dependent variables (i.e., vulnerability ratings, accuracy ratings) see Table 9; for a list of descriptive and internal consistency ratings for observer personality traits (i.e., HEXACO-60, SRP 4:SF, CAST, FFMI, SD4, NPI-16) see Table 10. Overall, internal consistency for the HEXACO-60, SRP 4:SF, CAST, FFMI, SD4, and NPI-16 are considered acceptable to good, except for honesty-humility which was poor ($\alpha = .57$). Finally, for a list of descriptive statistics for perceived dater personality and emotionality traits, and descriptive statistics for cues utilized during vulnerability appraisals, see Table 11 and Table 12, respectively. Notably, descriptive statistics for ‘overall’ variables were only included if the variable was used during primary analyses (i.e., correlation and/or regression).

Table 9*Means, Standard Deviations and Ranges for Vulnerability and Accuracy Ratings of Dater**Videos*

Scale	<i>M</i>	<i>SD</i>	Range
Vulnerability Rating			
Sexual			
Low RAS	49.39	20.49	0-100
High RAS	41.92	19.53	0-100
Overall	46.65	19.25	0-100
Violent			
Low RAS	44.70	20.74	0-100
High RAS	40.81	19.03	0-100
Overall	42.76	19.16	0-100
Accuracy Rating			
Sexual			
Low RAS ^a	27.59	12.74	5.75-67.50
High RAS ^a	28.91	14.20	5.25-72.25
Violent			
Low RAS ^a	22.75	9.90	4.50-50.50
High RAS	34.70	6.92	12.25-57.50

Note. ^araw scores (pre-transformation); *N* = 309.

Table 10*Means, Standard Deviations and Internal Consistencies for Observer Personality**Variables*

Scale	<i>N</i>	<i>M</i>	<i>SD</i>	Range	Cronbach's α
HEXACO-60					
Honesty-Humility ^a	298	33.25	4.97	18-48	.57
Emotionality	298	32.93	6.87	11-49	.81
eXtraversion	298	30.70	6.69	11-50	.82
Agreeableness	298	31.71	5.68	15-48	.73
Conscientiousness	298	34.58	5.99	18-49	.80
Openness	298	33.63	6.65	15-49	.78
SRP 4:SF					
Affect ^a	300	13.37	4.67	7-29	
Lifestyle	300	12.86	4.98	7-28	.77
Interpersonal	299	14.80	5.01	7-30	.76
Antisocial ^a	300	11.72	4.06	8-25	.81
Factor 1	300	26.22	9.06	14-55	.87
Factor 2	300	26.50	7.97	15-50	.83
Total	300	52.75	15.90	29-102	.91
CAST					
Direct-Physical ^a	301	7.22	2.98	5-17	.82
Direct-Verbal	301	14.55	5.66	7-33	.80
Vicarious	301	14.24	4.93	7-30	.79
Total	301	34.07	10.33	18-68	.87
FFMI					
Antagonism ^a	299	51.00	9.68	25-79	.82
Agency	299	77.89	13.54	39-108	.88
Planfulness	299	27.97	5.15	14-40	.77
Total	299	156.87	18.11	108-211	.82
SD4					
Machiavellianism ^a	297	21.98	4.14	7-32	.73
Narcissism	297	20.03	5.01	7-35	.80
Psychopathy ^a	297	13.67	5.16	7-31	.83
Sadism	297	16.19	5.80	7-32	.81
NPI-16					
Narcissism	303	3.30	2.88	0-13	.74

Note. ^arank adjusted scores due to outliers; HEXACO-60 = Honesty-humility, Emotionality, extraversion, Agreeableness, Conscientiousness, Openness – 60 (Ashton & Lee, 2009); SRP 4:SF = Self-Report Psychopathy Scale 4th Edition: Short Form (Paulhus, Neumann, et al., 2016); CAST = Comprehensive Assessment of Sadistic Tendencies (Buckels & Paulhus, 2013); FFMI = Five Factor Machiavellian Inventory (Collison et al.,

2018); SD4 = Short Dark Tetrad (Paulhus et al., 2018); NPI-16 = Narcissistic Personality Inventory-16 (Ames et al., 2006).

Table 11*Means, Standard Deviations and Ranges for Perceived Dater Personality and**Emotionality Traits*

Personality/ Emotionality Trait	<i>M</i>	<i>SD</i>	Range
Assertive			
Low RAS	2.79	0.53	1.50–4.50
High RAS	3.23	0.55	1.75–4.75
Submissive			
Low RAS ^a	3.19	0.53	1.50–4.50
High RAS ^a	2.79	0.47	1.50–4.50
Anxious			
Low RAS	3.38	0.58	1.50–4.75
High RAS	2.76	0.55	1.00–4.25
Overall	3.08	0.41	1.75–4.29
Agreeable			
Low RAS ^a	5.58	0.44	2.24–4.75
High RAS ^a	3.53	0.48	1.99–4.75
Conscientious			
Low RAS ^a	3.39	0.50	1.75–4.75
High RAS ^a	3.44	0.53	1.74–5.00
Dominant			
Low RAS	2.56	0.49	1.00–4.00
High RAS	3.00	0.54	1.50–4.50
Extraverted			
Low RAS	3.04	0.55	1.50–4.50
High RAS ^a	3.28	0.51	1.74–4.75
Open			
Low RAS	3.27	0.51	1.75–4.50
High RAS	3.42	0.45	2.25–4.75
Confident			
Low RAS	3.08	0.54	2.00–4.50
High RAS ^a	3.45	0.51	1.99–5.00
Overall	3.27	0.38	2.19–4.25
Low Self-Esteem			
Low RAS	2.87	0.52	1.25–4.25
High RAS	2.61	0.52	1.25–4.25
Overall ^a	2.75	0.41	1.62–3.86

Personality/ Emotionality Trait	<i>M</i>	<i>SD</i>	Range
Relaxed			
Low RAS	2.85	0.62	1.00-4.50
High RAS ^a	3.33	0.49	2.00-4.75
Warm			
Low RAS ^a	3.44	0.49	1.90-4.75
High RAS	3.42	0.48	2.00-4.75
Nurturance			
Low RAS ^a	3.25	0.48	1.74-4.50
High RAS	3.29	0.46	2.00-4.50
Naïve			
Low RAS ^a	2.94	0.55	1.50-4.50
High RAS	2.72	0.56	1.00-4.50

Note. ^arank adjusted scores due to outliers; *N* = 309.

Table 12*Means, Standard Deviations and Ranges for Cues Utilized During Victim Appraisal*

Cue	<i>M</i>	<i>SD</i>	Range
Total # of cues mentioned			
Low RAS	3.41	1.78	0-7
High RAS	3.22	1.71	0-7
Overall	3.32	1.70	0-7
I don't know			
Low RAS	0.12	0.29	0-1
High RAS	0.12	0.29	0-1
I just knew it			
Low RAS	0.07	0.17	0-0.61
High RAS	0.08	0.18	0-0.68
Posture			
Low RAS	0.65	0.36	0-1
High RAS	0.64	0.36	0-1
Overall	0.65	0.34	0-1
Physical Appearance			
Low RAS	0.43	0.40	0-1
High RAS	0.39	0.37	0-1
Overall	0.41	0.36	0-1
Upper Body			
Low RAS	0.51	0.37	0-1
High RAS	0.52	0.36	0-1
Dress			
Low RAS	0.20	0.27	0-1
High RAS	0.13	0.24	0-0.80
Overall ^a	0.16	0.24	0-0.89
Lower Body			
Low RAS	0.30	0.38	0-1
High RAS	0.56	0.34	0-1
Facial Expressions			
Low RAS	0.56	0.38	0-1
High RAS	0.61	0.38	0-1
Overall	0.59	0.36	0-1
Emotional Expression			
Low RAS	0.63	0.38	0-1
High RAS	0.63	0.38	0-1
Overall ^a	0.63	0.36	0-1

Note. ^a rank adjusted scores due to outliers; *N* = 309.

Vulnerability and Accuracy Ratings

On average, sexual vulnerability ratings ($M = 45.65$, $SD = 19.25$) were significantly higher than violent vulnerability ratings ($M = 42.76$, $SD = 19.16$), $t(308) = 4.39$, $p < .001$, $d = 0.25$. Similarly, low RAS daters were perceived as significantly more vulnerable to sexual victimization ($M = 49.34$, $SD = 20.49$) than their higher scoring counterparts ($M = 41.92$, $SD = 19.53$), $t(308) = 11.84$, $p < .001$, $d = 0.68$, and were also perceived as being more vulnerable to violent victimization ($M = 44.70$, $SD = 20.74$) in comparison to high RAS daters ($M = 40.81$, $SD = 19.03$), $t(308) = 6.29$, $p < .001$, $d = 0.36$. Expectantly, sexual and violent vulnerability ratings were significantly positively correlated in both low ($r = .80$, $p < .001$, 95% CI [.74, .85]) and high RAS daters ($r = .80$, $p < .001$, 95% CI [.73, .87]).

Observer accuracy¹⁰ of sexual vulnerability ($Mdn = 27.38$) did not significantly differ from accuracy of violent vulnerability ($Mdn = 27.29$), $z = -1.08$, $p = .28$, $r_{vulnerability} = .06$, nor did sexual accuracy significantly differ between low ($Mdn = 23.50$) or high ($Mdn = 28.25$) RAS daters, $z = -1.63$, $p = .10$, $r_{sexual} = .09$. In contrast, accuracy of violent vulnerability between low ($Mdn = 21.25$) and high ($Mdn = 35.00$) RAS daters was significantly different, $z = -13.11$, $p < .001$, $r_{violent} = .75$, where violent vulnerability ratings were more accurate in the low RAS group in comparison to the high RAS group. Sexual and violent accuracy ratings were not significantly correlated¹¹ in either low ($r_s = -.08$, $p = .14$, [-.19, .03]) or high ($r_s = .03$, $p = .55$, [-.08, .15]) RAS daters.

¹⁰ As sexual accuracy overall and in low/high RAS daters, and violent accuracy overall and in low RAS daters was positively skewed and required different transformations to adjust for non-normality, pairwise comparisons for accuracy ratings were made utilizing the Wilcoxon signed-rank test on pre-transformed accuracy ratings, as the Wilcoxon signed-rank test is robust against deviations of normality.

¹¹ Spearman's rho was utilized for any variable that had an outlier and required rank-order transformations

Perceived Dater Personality and Emotionality Ratings

On average, low RAS daters were perceived as significantly less assertive ($t(308) = -11.00, p < .001, d = 0.63$), dominant ($t(308) = -11.90, p < .001, d = 0.68$), extraverted ($t(308) = -6.01, p < .001, d = 0.34$), open ($t(308) = -4.45, p < .001, d = 0.25$), confident ($t(308) = -9.41, p < .001, d = 0.54$), and relaxed ($t(308) = -11.94, p < .001, d = 0.68$) in comparison to high RAS daters (see Table 11 for descriptive statistics). On the other hand, on average, low RAS daters were perceived as significantly more submissive ($t(308) = 10.87, p < .001, d = 0.62$), anxious ($t(308) = 14.15, p < .001, d = 0.81$), naïve ($t(308) = 6.66, p < .001, d = 0.38$), and having lower self-esteem ($t(308) = 7.06, p < .001, d = 0.40$), than their higher scoring counterparts. No significant pairwise differences emerged between low and high RAS daters on appearing conscientious, nurturing, warm, or agreeable (i.e., $p > .05$; see Table 13).

Table 13*Pairwise Comparisons of Perceived Personality Traits in Low and High RAS Daters*

	Mean Difference	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>
Pair 1 (Assertive)					
Low – High RAS	-.44	-11.00	308	< .001	0.63
Pair 2 (Submissive)					
Low – High RAS	.39	10.87	308	< .001	0.62
Pair 3 (Anxious)					
Low – High RAS	.62	14.15	308	< .001	0.81
Pair 4 (Agreeable)					
Low – High RAS	.045	-1.50	308	.14	0.09
Pair 5 (Conscientious)					
Low – High RAS	-.055	-1.79	308	.074	0.10
Pair 6 (Dominant)					
Low – High RAS	-.44	-11.90	308	< .001	0.68
Pair 7 (Extraverted)					
Low – High RAS	-.24	-6.01	308	< .001	0.34
Pair 8 (Open)					
Low – High RAS	-.16	-4.54	308	< .001	0.25
Pair 9 (Confident)					
Low – High RAS	-.37	-9.41	308	< .001	0.54
Pair 10 (Low Self-esteem)					
Low – High RAS	.25	7.06	308	< .001	0.40
Pair 11 (Relaxed)					
Low – High RAS	-.48	-11.94	308	< .001	0.68
Pair 12 (Warm)					
Low – High RAS	.019	0.62	308	.53	0.04
Pair 13 (Nurturing)					
Low – High RAS	-.035	-1.14	308	.26	0.07
Pair 14 (Naïve)					
Low – High RAS	.22	6.66	308	< .001	0.38

Cues Utilized During Vulnerability Appraisals

On average, observers reported using significantly more cues when determining vulnerability ratings for low RAS daters than for high RAS daters, $t(308) = 4.11$, $p < .001$, $d = 0.23$ (see Table 12 for descriptive statistics). Similarly, observers were

significantly more likely to cite physical appearance ($t(308) = 2.46, p = 0.014, d = 0.14$), how the daters lower body moved ($t(308) = 8.44, p < .001, d = 0.48$), and the daters dress ($t(308) = 5.31, p < .001, d = 0.30$) in their vulnerability assessments of low RAS daters in comparison to high RAS daters. Alternatively, facial expressions were significantly more likely to be employed in high RAS daters than in low RAS daters ($t(308) = -3.47, p < .001, d = 0.20$). No significant pairwise comparisons of remaining cues emerged (i.e., I don't know, I just knew it, posture, upper body, emotional appearance; $p > .05$; see Table 14).

Table 14

Pairwise Comparisons of the Cues Utilized During Vulnerability Appraisals of Low and High RAS Daters

	Mean Difference	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>
Pair 1 (Total # of cues)					
Low – High RAS	.19	4.11	308	< .001	0.23
Pair 2 (I don't know)					
Low – High RAS	-.00054	-0.08	308	.94	0.004
Pair 3 (I just knew it)					
Low – High RAS	-.013	-1.63	308	.10	0.09
Pair 4 (Posture)					
Low – High RAS	.012	0.80	308	.43	0.05
Pair 5 (Physical Appearance)					
Low – High RAS	.037	2.46	308	.014	0.14
Pair 6 (Upper body)					
Low – High RAS	-.0094	-0.57	308	.57	0.03
Pair 7 (Dress)					
Low – High RAS	.063	5.31	308	< .001	0.30
Pair 8 (Lower Body)					
Low – High RAS	.14	8.44	308	< .001	0.48
Pair 9 (Facial Expression)					
Low – High RAS	-.053	-3.47	308	< .001	0.20
Pair 10 (Emotional appearance)					
Low – High RAS	.0046	0.32	308	.75	0.02

Primary Analysis

Dark Tetrad, HEXACO Personality Traits and Accuracy of Vulnerability Appraisals

A series of bivariate correlations were first conducted to determine how observer personality traits (i.e., psychopathy, narcissism, Machiavellian, sadism, HEXACO) relate to accuracy in perceiving vulnerability in others (RQ1/RQ2). While the assumptions of normality, homoscedasticity, and linearity were met for most key variables (i.e., observer personality traits, vulnerability ratings, perceived personality/ emotionality traits, cues

utilized during vulnerability appraisal), and normality of accuracy ratings were met post-transformation, some key variables (i.e., honesty-humility, affect, antisocial, antagonism, direct-physical, Machiavellian [SD4], psychopathy [SD4], violence in high RAS daters) contained outliers and to reduce bias, these outliers were adjusted. As such, Pearson's r was employed for any variables in which no outliers were present, while Spearman's rho was utilized for variables that required adjustments as the rank order of each variable remained consistent from pre- to post-adjustment (Field, 2013).

Moreover, while alpha adjustments (e.g., Bonferroni adjustment) are recommended when multiple tests are conducted to reduce Type-1 error, some researchers have argued that under some circumstances (e.g., exploratory studies, studies with specific hypotheses), in place of alpha adjustments, researchers should instead include effect and power sizes, make logical and reasonable conclusions, and encourage replication studies (e.g., Bender & Lange, 1999; Moran, 2003; Perneger, 1998). Therefore, given the exploratory rather than confirmatory nature of the present study, in conjunction with specific predictions being made for most research questions, alpha adjustments were not made with the traditional alpha value of .05 being used to determine significance.

With evidence to suggest that psychopathy, specifically Factor 2 and total scores, are related to accuracy in correctly identifying victims versus nonvictims (e.g., Denardo et al., 2018; Ritchie et al., 2018), it was predicted that psychopathy total scores would be associated with accuracy in correctly identifying individuals who have self-reported as being vulnerable to sexual and/or violent victimization, while Factor 2 scores would be related with accuracy in identifying violent victimization. Contrary to this prediction,

psychopathy facets, factors and total scores, as measured by the SRP 4:SF and SD4, were unrelated to all forms of accuracy (i.e., sexual, violent) in both low and high RAS dater videos (see Table 15).

Table 15

Bivariate Correlations between Observer Accuracy and Psychopathy Facets, Factors and Total Scores

Personality Trait	Sexual Accuracy		Violent Accuracy	
	Low RAS	High RAS	Low RAS	High RAS ^d
Affect ^b	.02	-.07	-.04	.01
Interpersonal ^{ac}	-.01	-.01	-.01	.03 ^b
Lifestyle ^a	-.01	-.04	-.004	.05 ^b
Antisocial ^b	-.001	-.001	-.01	-.07
Factor 1 ^a	.01	-.04	-.02	.02 ^b
Factor 2 ^a	-.01	-.01	-.01	.01 ^b
SRP Total ^a	.001	-.03	-.02	.02 ^b
Psychopathy (SD4) ^b	.04	-.01	-.05	.004

Note. Correlational analyses of overall sexual/ violent accuracy were only conducted on psychopathic personality traits when both low and high RAS groups had significant correlation coefficients with the same directionality. $N = 300$.

^aPearson's r ; ^bSpearman's rho; ^c $N = 299$; ^dRanked data due to outlier, so Spearman's rho was utilized.

Given that the Dark Tetrad traits are strongly correlated with one another (e.g., Porter et al., 2014), in conjunction with some researchers finding that in addition to psychopathy, Machiavellianism, sadism and the honesty-humility dimension from the HEXACO are related to accuracy in identifying victimization history (e.g., Ritchie et al., 2019), it was further hypothesized that Machiavellianism, sadism, and honesty-humility would be associated with accuracy in identifying vulnerability to both sexual and violent victimization in others. While the planfulness subscale of the FFMI was negatively¹² related to sexual accuracy in low RAS daters ($r = -.17, p = .003, 95\% \text{ CI } [-.29, -.05]$), this hypothesis was only partially supported. Specifically, planfulness also demonstrated a weak, positive correlation to identifying sexual vulnerability in high RAS daters ($r = -.16,$

¹² As accuracy ratings were calculated by subtracting observer and dater vulnerability ratings, a lower score indicates greater accuracy.

$p = .005$, 95% CI [.05, .28]), indicating that those with planfulness traits are less likely to correctly identify sexual vulnerability in high assertive women, but went unrelated to violent accuracy in both low and high RAS daters (see Table 16). Further, the direct-verbal subscale of the CAST demonstrated a weak, positive relationship with accuracy of sexual vulnerability in low RAS daters ($r = .14$, $p = .016$, 95% CI [.02, .25]), again indicating that individuals with these traits are less likely to correctly identify sexual vulnerability in low assertive women. No other significant relationships between accuracy of identifying vulnerability and Machiavellian, narcissistic, or sadistic personality traits were observed (see Table 16).

Table 16

Bivariate Correlations between Observer Accuracy and Machiavellian, Narcissistic, and Sadistic Personality Traits

Personality Trait	N	Sexual Accuracy		Violent Accuracy	
		Low RAS	High RAS	Low RAS	High RAS ^c
CAST	301				
Direct-Physical ^b		.04	-.01	-.01	.05
Direct-Verbal ^a		.14*	-.11	-.04	.02 ^b
Vicarious ^a		.08	-.05	-.02	-.02 ^b
Total ^a		.11	-.07	-.03	.00 ^b
FFMI	299				
Antagonism ^b		.02	.01	-.02	.08
Agency ^a		.06	-.02	.10	.03 ^b
Planfulness ^a		-.17**	.16**	.09	.02 ^b
Total ^a		-.01	.03	.10	.07 ^b
SD4	297				
Machiavellianism ^b		-.03	.02	-.04	-.01
Narcissism ^a		-.03	-.04	.03	-.02 ^b
Sadism ^a		.03	-.05	-.06	-.02 ^b
NPI-16	303				
Narcissism ^a		.02	-.04	.10	-.02 ^b

Note. Correlational analyses of overall sexual/ violent accuracy were only conducted on Machiavellian, narcissistic, and sadistic personality traits when both low and high RAS groups had significant correlation coefficients with the same directionality.

^aPearson's r ; ^bSpearman's rho; ^cRanked data due to outlier, so Spearman's rho was utilized.

* $p < .05$. ** $p < .01$.

Although unrelated to accuracy in identifying violent victimization, conscientiousness was negatively related to correctly identifying sexual vulnerability ($r = -.13, p = .031, 95\% \text{ CI } [-.24, -.01]$) in low RAS daters and positively related in high RAS daters ($r = .13, p = .025, 95\% \text{ CI } [.01, .25]$), suggesting that individuals high in conscientiousness were better able to identify sexual vulnerability in low assertive women, while performing worse in high assertive women. No other relationship between

the HEXACO dimensions and accuracy in identifying victim vulnerability were noted (see Table 17).

Table 17

Bivariate Correlations between Observer Accuracy and HEXACO-60 Personality Traits

Personality Trait	Sexual Accuracy		Violent Accuracy	
	Low RAS	High RAS	Low RAS	High RAS ^c
HEXACO-60				
Honesty-Humility ^b	-.03	.06	.03	.06
Emotionality ^a	-.08	.07	-.02	.03 ^b
extraversion ^a	-.001	-.03	.04	-.003 ^b
Agreeableness ^a	-.01	.02	-.002	.06 ^b
Conscientiousness ^a	-.13*	.13*	.03	.02 ^b
Openness ^a	-.08	.07	.001	.07 ^b

Note. Correlational analyses of overall sexual/ violent accuracy were only conducted on HEXACO dimensions when both low and high RAS groups had significant correlation coefficients with the same directionality. $N = 298$.

^aPearson's r ; ^bSpearman's rho; ^cRanked data due to outlier, so Spearman's rho was utilized.

* $p < .05$.

Given that it is reasonable to assume that gender of the observer and attractiveness of the dater may play a role in identifying and/or perceiving vulnerability in others, Pearson's r and a point-biserial correlation was conducted to determine the relationships between sexual accuracy of low RAS daters, and attractiveness and gender, respectively. Results indicated that both attractiveness of low RAS daters ($r = -.16, p = .005, 95\% \text{ CI } [-.28, -.03]$) and observer gender ($r_{pb} = .22, p < .001, 95\% \text{ CI } [.11, .33]$) were both significantly related to accuracy, with small effects. For point-biserial correlations, the sign of the coefficient is not interpreted in the same manner as one would interpret a bivariate correlation, rather, the sign depends on which category was coded as 0 and which was coded as 1 (Field, 2013). In this circumstance, as females were coded as 0 and males were coded as 1, a correlation coefficient of .22 would indicate that

as gender changes from female to male, accuracy decreases. Considering both variables were significantly related to accuracy, a series of partial correlations were next conducted to determine the unique variance attributed to the prediction of sexual victimization in low RAS daters for both planfulness and conscientiousness, while holding observer gender and dater attractiveness constant. Importantly, partial correlations were only conducted on the relationships between sexual vulnerability in low RAS daters and the aforementioned personality traits, as they were the sole variables in which accuracy of detecting vulnerability was identified. After holding gender and attractiveness constant, planfulness continued to demonstrate a weak, but significant negative relationship with correctly identifying sexual vulnerability in low RAS daters ($r = -.13, p = .023, 95\% \text{ CI } [-.25, -.01]$), while this relationship was no longer significant for conscientiousness ($r = -.10, p = .099, 95\% \text{ CI } [-.20, .01]$).

Following this, a hierarchical regression was conducted to determine which observer personality trait demonstrated the most saliency in accuracy of detecting vulnerability (RQ2). Notably, only those observer traits in which significant negative relationships with accuracy in identifying victim vulnerability (i.e., planfulness, conscientiousness) were included into the present model. It was hypothesized that psychopathy would demonstrate to be the most salient predictor in identifying both sexual and violent vulnerability; however, as psychopathy did not demonstrate a significant relationship with accuracy, this prediction went unsupported. Correlational analyses between all relevant predictor variables (i.e., observer gender, dater attractiveness, planfulness, conscientiousness) were first conducted to ensure that no correlation fell beyond an $r = .90$, to which both Tabachnick and Fidell (2013) and Field

(2013) state could cause statistical problems. As correlations ranged from $r = .06$ to $r = .73$, variance inflation factors (VIF) for all variables fell below 10, and the average VIF was 1.59, multicollinearity/ biased regression estimates were not of concern (see Table 18; Field, 2013; Tabachnick & Fidell, 2013).

Table 18

Bivariate Correlations and Variance Inflation Factors for Predictors Relevant to Sexual Accuracy in Low RAS Daters

	LA	G	P	C	VIF ^a
Attractiveness Low RAS	1.00				1.07
Gender	-.12**	1.00			1.05
Planfulness	.17**	-.11*	1.00		2.16
Conscientiousness	.15**	-.06	.73**	1.00	2.14

Note. LA = Attractiveness for low RAS daters; G = Gender; P = Planfulness subscale of the FFMI; C = Conscientious subscale of the HEXACO-60; VIF = Variance inflation factor. $N = 289$.

^aAs indicated from the final model including all predictors.

* $p < .05$. ** $p < .01$.

Similarly to the partial correlations, observer gender and dater attractiveness were added as predictors in the first step of the hierarchical multiple regression. This model was significant, $F(2, 281) = 8.459, p < .001$, where these two variables explained 5.7% of the variance in the identification of sexual vulnerability in low RAS daters. For this model, gender ($t(281) = 3.01, \beta = .068, p = .003$) and attractiveness ($t(281) = -2.17, \beta = -.005, p = .031$), were both significant predictors. In the second step, both planfulness and conscientiousness were simultaneously added as predictors. This final model with all predictors was significant, $F(4, 279) = 5.89, p < .001$, where the inclusion of the latter two predictors explained an additional 2.1% of variance in accuracy, $R^2 \text{ Change} = .021, F(2, 279) = 3.19, p = .043$. In this final model, gender ($t(279) = 2.82, \beta = .064, p = .005$),

was a significant predictor, while planfulness ($t(279) = -1.95$, $\beta = -.006$, $p = .052$), attractiveness ($t(284) = -1.77$, $\beta = -.004$, $p = .077$) and conscientiousness ($t(284) = 0.29$, $\beta = .001$, $p = .77$) were not. Put simply, after accounting for gender and attractiveness, neither planfulness nor conscientiousness incrementally added in the prediction of accurately assessing sexual vulnerability for low assertive women; gender was identified as the most salient predictor in the identification of sexual vulnerability in low assertive women, where after the effects of attractiveness, planfulness and conscientiousness are taken into account, men will score .064 units higher on accuracy than women, signifying that women are more accurate in their assessments of sexual vulnerability in low assertive women¹³.

Observer Personality Variables and Vulnerability Appraisals

The next set of bivariate correlations were conducted to determine how observer personality traits (i.e., Dark Tetrad, HEXACO) impact how sexual and violent vulnerability is perceived in others (RQ3). Notably, while the first two research questions focused on the discrepancy ratings between observer perceived vulnerability assessments and daters' self-assessments, or how accurately an observer perceives self-ascribed vulnerability, the current research question is solely considering the observers vulnerability ratings. With evidence to suggest that psychopathy is associated with feeling less threatened by others (e.g., Brankley & Rule, 2014) and that sadism and psychopathy demonstrate the highest correlation among the Dark Traits (e.g., Ritchie et al., 2019), it was hypothesized that psychopathy and sadism would perceive others as being more vulnerable to both sexual and violent victimization. As only the direct-verbal

¹³ As accuracy ratings were calculated by subtracting observer and dater vulnerability ratings, a lower score indicates greater accuracy.

subscale of the CAST demonstrated a weak, negative correlation to sexual vulnerability in high RAS daters ($r = -.20, p = .038, 95\% \text{ CI } [-.25, .01]$), this hypothesis went mostly unsupported. Importantly however, while the former relationship was significant, the confidence interval (CI; obtained via bootstrapping, which is known to be a more robust estimate of the correlation coefficient [Field, 2013]), contained zero, which would indicate the relationship may not be significant.

Of the remaining Dark Tetrad traits, planfulness was the only trait that demonstrated significant relationships with vulnerability ratings. Specifically, planfulness showed positive relationships with sexual vulnerability in both low ($r = .19, p = .001, 95\% \text{ CI } [.06, .32]$) and high ($r = .17, p = .004, 95\% \text{ CI } [.03, .28]$) RAS daters, and with violent vulnerability in low ($r = .16, p = .004, 95\% \text{ CI } [.03, .28]$) and high ($r = .20, p < .001, 95\% \text{ CI } [.08, .31]$) RAS daters, all to a small effect, where higher scores on planfulness correlated to higher scores of perceived vulnerability. As planfulness demonstrated positive relationships for all four outcome variables, bivariate correlations utilizing the overall scores of vulnerability ratings, irrespective of RAS score, were employed. The positive relationship between planfulness and both sexual ($r = .18, p = .001, 95\% \text{ CI } [.06, .30]$) and violent ($r = .19, p = .001, 95\% \text{ CI } [.06, .31]$) vulnerability remained. No other Dark Tetrad trait, including psychopathy, demonstrated significant relations to vulnerability (see Table 19).

Table 19*Bivariate Correlations between Vulnerability Ratings and the Dark Tetrad Traits*

Personality Trait	N	Sexual Vulnerability			Violent Vulnerability		
		Low RAS	High RAS	Overall	Low RAS	High RAS	Overall
SRP 4:SF	300						
Affect ^b		.03	-.06	-	.04	.02	-
Interpersonal ^{ac}		.01	-.03	-	.04	.00	-
Lifestyle ^a		.03	-.05	-	.07	-.01	-
Antisocial ^b		.05	.01	-	.03	.03	-
Factor 1 ^a		.01	-.05	-	.04	-.003	-
Factor 2 ^a		.05	-.01	-	.05	.003	-
Total ^a		.03	-.03	-	.05	.00	-
CAST	301						
Direct-Physical ^b		.01	-.02	-	.03	.01	-
Direct-Verbal ^a		-.08	-.12*	-	-.03	-.04	-
Vicarious ^a		-.04	-.07	-	-.03	-.004	-
Total ^a		-.06	-.09	-	-.02	-.01	-
FFMI	299						
Antagonism ^b		.02	-.004	-	.02	.03	-
Agency ^a		-.04	-.04	-	.01	.03	-
Planfulness ^a		.19**	.17**	.18**	.17**	.20**	.18**
Total ^a		.03	.01	-	.07	.07	-
SD4	297						
Machiavellianism ^b		.08	.01	-	.11	.09	-
Narcissism ^a		.02	-.02	-	.07	.05	-
Psychopathy ^b		-.08	-.11	-	-.06	-.06	-
Sadism ^a		-.01	-.05	-	-.02	.02	-
NPI-16	303						
Narcissism ^a		-.02	-.05	-	.07	.05	-

Note. Correlational analyses of overall sexual/ violent vulnerability were only conducted on Dark Tetrad personality traits when both low and high RAS groups had significant correlation coefficients with the same directionality. - = Correlational analysis not performed.

^a Pearson's *r*; ^b Spearman's rho; ^c *N* = 299.

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

Of the HEXACO personality traits, like planfulness, conscientiousness demonstrated weak positive correlations with sexual vulnerability in low ($r = .13$, $p =$

.021, 95% CI [.01, .25]) and high ($r = .14, p = .015$, 95% CI [.01, .27]) RAS daters, as well as with violent victimization in both low ($r = .13, p = .031$, 95% CI [.00, .24]) and high ($r = .16, p = .006$, 95% CI [.04, .28]) RAS daters, where higher scores of conscientiousness related to higher scores of perceived vulnerability in others. These correlations were followed up with a bivariate correlation of overall sexual and violent vulnerability as to get a sense of how conscientiousness relates to global ratings of vulnerability. Conscientiousness displayed significant positive correlations to both sexual ($r = .14, p = .015$, 95% CI [.01, .27]) and violent ($r = .15, p = .012$, 95% CI [.02, .27]) vulnerability, to a small effect. Notably, no other HEXACO dimension was significantly related to vulnerability (see Table 20).

Table 20

Bivariate Correlations between Vulnerability Ratings and HEXACO Personality Traits

Personality Trait	Sexual Vulnerability			Violent Vulnerability		
	Low RAS	High RAS	Overall	Low RAS	High RAS	Overall
HEXACO-60						
Honesty-Humility ^b	.05	.08	-	.02	.02	-
Emotionality ^a	.06	.07	-	.01	-.01	-
extraversion ^a	-.02	-.02	-	.02	-.03	-
Agreeableness ^a	.03	.06	-	.02	-.001	-
Conscientiousness ^a	.13*	.14*	.14*	.13*	.16**	.15*
Openness ^a	.06	.07	-	.05	.05	-

Note. Correlational analyses of overall sexual/ violent vulnerability were only conducted on HEXACO dimensions when both low and high RAS groups had significant correlation coefficients with the same directionality. - = Correlational analysis not performed. $N = 298$.

^a Pearson's r ; ^b Spearman's rho.

* $p < .05$. ** $p < .01$.

Provided that both planfulness and conscientiousness were significantly positively related to sexual and violent vulnerability ratings in both low and high RAS daters,

partial correlations were conducted as a follow-up to determine the unique variance each observer trait has upon making assessments of vulnerability in others. After accounting for observer gender and dater attractiveness, planfulness, to a small effect, remained significantly positively correlated with sexual vulnerability in low ($r = .14, p = .019, 95\% \text{ CI } [.02, .25]$) and high ($r = .12, p = .043, 95\% \text{ CI } [-.01, .24]$) RAS daters. Planfulness also remained positively correlated with violent vulnerability in low ($r = .12, p = .045, 95\% \text{ CI } [-.01, .24]$) and high ($r = .17, p = .004, 95\% \text{ CI } [.05, .29]$) RAS daters, albeit, to a small effect. Again, as each relationship remained significant, and with the same directionality, partial correlations between planfulness and overall (i.e., irrespective of daters' RAS score) sexual and violent vulnerability were conducted. As with the bivariate and partial correlations, planfulness demonstrated significant positive correlations with global ratings of sexual ($r = .13, p = .028, 95\% \text{ CI } [.01, .25]$) and violent ($r = .14, p = .015, 95\% \text{ CI } [.02, .27]$) vulnerability. Notably, the confidence intervals in both sexual vulnerability for high RAS daters and violent vulnerability in low RAS daters contained zero, which would indicate that these relationships may not be significant, this may be further supported by their small effect sizes.

Alternatively, while conscientiousness continued to demonstrated significant positive relationships with sexual vulnerability in high RAS daters ($r = .12, p = .044, 95\% \text{ CI } [-.02, .25]$), and with violent vulnerability in high RAS daters ($r = .15, p = .010, 95\% \text{ CI } [.02, .27]$), the relationships between sexual vulnerability in low RAS daters ($r = .10, p = .10, 95\% \text{ CI } [-.03, .21]$) and violent vulnerability in low RAS daters ($r = .10, p = .088, 95\% \text{ CI } [-.02, .22]$), was insignificant. Importantly, as the confidence interval for

sexual vulnerability in high RAS daters contained zero, results should be interpreted with caution as a significant relationship may not actually exist.

Perceived Personality/ Emotionality and Vulnerability

The next series of bivariate correlations were conducted to assess how perceived personality traits in others relate to perceived vulnerability to sexual and violent victimization (RQ4). With evidence to suggest that sexual vulnerability and victimization are linked to submissiveness, anxiety, and diminished levels of assertiveness and confidence (Blaskovitz & Bennell 2019; Corbin et al., 2001; Goetz et al., 2012; Greene & Navarro, 1998; Selkin, 1982), in conjunction with some offenders citing selecting victims whom appear naïve, caring or affectionate (Beauregard et al., 2007; Stevens, 1994), it was predicted that for sexual vulnerability, daters would be perceived as having lower levels of assertiveness and confidence, while also appearing submissive, anxious, nurturing and/or naïve. Notably, given the lack of research geared towards personality traits in female victims of violent crime, how perceived personality traits relate to violent vulnerability was exploratory.

Results indicated that assertiveness was negatively correlated with sexual vulnerability in high RAS daters ($r = -.12, p = .031, 95\% \text{ CI } [-.22, -.012]$), to a small effect, such that when perceived assertiveness increased, perceived sexual vulnerability decreased. Submissiveness was positively correlated to both sexual ($r_s = .16, p = .006, 95\% \text{ CI } [.05, .25]$) and violent ($r_s = .15, p = .008, 95\% \text{ CI } [.04, .25]$) vulnerability in low RAS daters, where the more submissive a dater appeared, the more vulnerable they appeared to both types of victimization. Anxiousness demonstrated a weak, but positive relationship with sexual vulnerability in low RAS daters ($r = .14, p = .014, 95\% \text{ CI } [.03,$

.25]) and violent vulnerability in both low ($r = .15, p = .008, 95\% \text{ CI } [.04, .25]$) and high ($r = .13, p = .021, 95\% \text{ CI } [.02, .25]$) RAS daters, such that when daters were perceived as more anxious, they were simultaneously perceived as being more vulnerable to victimization. Unsurprisingly, overall anxiousness (regardless of dater RAS) was also positively correlated with violent vulnerability ($r = .13, p = .021, 95\% \text{ CI } [.004, .25]$). Although to a small effect, confidence was negatively related to sexual vulnerability in low ($r_s = -.13, p = .022, 95\% \text{ CI } [-.25, -.01]$) and high ($r_s = -.15, p = .009, 95\% \text{ CI } [-.26, -.03]$) RAS daters, as well as violent vulnerability in low ($r_s = -.16, p = .006, 95\% \text{ CI } [-.27, -.04]$) and high ($r_s = -.18, p = .001, 95\% \text{ CI } [-.28, -.07]$) RAS daters, where low levels of confidence was related to being perceived as more vulnerable to both types of victimization. Irrespective of dater RAS scores, confidence was also negatively related to violent ($r_s = -.15, p = .010, 95\% \text{ CI } [-.25, -.04]$) vulnerability, but went unrelated to sexual vulnerability ($r_s = -.10, p = .069, 95\% \text{ CI } [-.21, .02]$). Finally, in partial alignment with what was predicted, appearing naïve was positive related to sexual vulnerability in low RAS daters ($r_s = .20, p = .001, 95\% \text{ CI } [.09, .30]$).

Beyond what was hypothesized, dominance demonstrated a weak, negative relationship with sexual ($r = -.23, p < .001, 95\% \text{ CI } [-.33, -.12]$) and violent ($r = -.24, p < .001, 95\% \text{ CI } [-.34, -.13]$) vulnerability in low RAS daters such that low levels of perceived dominance were related to a higher degree of perceived vulnerability, at least in women with low assertiveness. Appearing warm was positively related to sexual vulnerability in low RAS daters ($r_s = .17, p = .002, 95\% \text{ CI } [.09, .27]$) to a small effect. Low self-esteem was positively related to sexual vulnerability in low ($r = .23, p < .001, 95\% \text{ CI } [.13, .35]$) and high ($r = .14, p = .013, 95\% \text{ CI } [.03, .25]$) RAS daters, as well as

violent vulnerability in low ($r = .19, p = .001, 95\% \text{ CI } [.08, .29]$) and high ($r = .17, p = .004, 95\% \text{ CI } [.05, .29]$) RAS daters, where appearing as though one had low self-esteem was related to an increase in perceived vulnerability to both kinds of victimization, at least to a small effect. Expectantly, global perceptions of low self-esteem were positively related to both sexual ($r_s = .18, p = .001, 95\% \text{ CI } [.001, .29]$) and violent ($r_s = .17, p = .003, 95\% \text{ CI } [.05, .28]$) vulnerability. Finally, appearing relaxed was negatively related to both sexual ($r_s = -.11, p = .045, 95\% \text{ CI } [-.22, .000]$) and violent ($r_s = -.12, p = .038, 95\% \text{ CI } [-.24, .003]$) vulnerability in low RAS daters, such that when women lacking in assertiveness appeared less relaxed, they were more likely to appear more vulnerable. Notably however, the latter two confidence intervals both contained zero, suggesting that in the population, these relationships may not be observed. No other significant relationship between personality and vulnerability emerged (see Table 21).

Table 21

Bivariate Correlations between Vulnerability Ratings and Perceived Dater Personality and Emotionality Traits

Personality/ Emotionality Trait	Sexual Vulnerability	Violent Vulnerability
Assertive		
Low RAS ^a	-.01	-.11
High RAS ^a	-.12*	-.11
Submissive		
Low RAS ^b	.16**	.15**
High RAS ^b	.10	.08
Anxious		
Low RAS ^a	.14*	.15**
High RAS ^a	.08	.13*
Overall ^a	-	.13*
Agreeable		
Low RAS ^b	.09	.01
High RAS ^b	.11	.05
Conscientious		
Low RAS ^b	.04	.03
High RAS ^b	-.003	-.03
Dominant		
Low RAS ^a	-.23**	-.24**
High RAS ^a	-.09	-.08
Extraverted		
Low RAS ^a	-.07	-.10
High RAS ^b	-.05	-.10
Open		
Low RAS ^a	-.07	-.05
High RAS ^a	.01	-.05
Confident		
Low RAS ^a	-.13*	-.16**
High RAS ^b	-.15**	-.18**
Overall ^a	.10	-.15*
Low Self-Esteem		
Low RAS ^a	.23**	.19**
High RAS ^a	.14*	.17**
Overall ^b	.18**	.17**

Personality/ Emotionality Trait	Sexual Vulnerability	Violent Vulnerability
Relaxed		
Low RAS ^a	-.11*	-.12*
High RAS ^b	-.03	-.07
Warm		
Low RAS ^b	.17**	.11
High RAS ^a	.07	.02
Nurturance		
Low RAS ^b	.07	.06
High RAS ^a	.03	.003
Naïve		
Low RAS ^b	.20**	.09
High RAS ^a	.09	.06

Note. Correlational analyses of overall variables were only conducted on personality/emotionality traits in which both low and high RAS groups had significant correlation coefficients with the same directionality. - = Correlational analysis not performed. $N = 309$.

^a Pearson's r ; ^b Spearman's ρ .

* $p < .05$. ** $p < .01$.

Nonverbal Cues and Vulnerability Appraisal

The next set of bivariate correlations were conducted to determine if observer personality traits impact how nonverbal vulnerability cues are perceived to be utilized during the assessment of vulnerability in others (RQ5). As research within this area is limited and mixed, these analyses were exploratory. With regards to psychopathy, the antisocial facet of the SRP 4:SF was negatively related to the total number of cues mentioned in both low ($r_s = -.17, p = .003, 95\% \text{ CI } [-.28, -.06]$) and high ($r_s = -.12, p = .043, 95\% \text{ CI } [-.23, -.001]$) RAS groups. This relationship was also demonstrated on a global, or overall level where despite assertiveness level of daters, the antisocial facet was negatively related to total number of cues utilized ($r_s = -.15, p = .010, 95\% \text{ CI } [-.25, -.04]$), such that as antisocial scores increased, the total number of nonverbal behaviours employed during the assessment of vulnerability decreased, with a small effect. The

antisocial facet was also negatively related to mentioning posture ($r_s = -.18, p = .001$, 95% CI $[-.28, -.08]$) and how the targets lower body moved ($r_s = -.16, p = .007$, 95% CI $[-.26, -.04]$) in low RAS daters, as well as citing facial expressions in low ($r_s = -.16, p = .007$, 95% CI $[-.25, -.07]$) and high ($r_s = -.19, p = .001$, 95% CI $[-.29, -.07]$) RAS daters, and the use of emotional appearance in low ($r_s = -.15, p = .009$, 95% CI $[-.26, -.04]$) and high ($r_s = -.18, p = .001$, 95% CI $[-.29, -.07]$) RAS daters, all with a small effects. Similarly to the overall use of cues, globally, the antisocial facet was also negatively related to the perception of using facial expressions ($r_s = -.18, p = .002$, 95% CI $[-.28, -.07]$) and the emotional appearance of daters ($r_s = -.12, p = .002$, 95% CI $[-.28, -.08]$).

With small effects, the lifestyle facet of the SRP 4:SF was positively related to observers indicating that they just knew it ($r = .13, p = .028$, 95% CI $[.01, .24]$), and using the dress ($r = .13, p = .024$, 95% CI $[.01, .26]$) of high RAS daters. Moreover, a weak but positive relationship with dater dress was also demonstrated for the affect facet ($r_s = .13, p = .026$, 95% CI $[.02, .23]$) and Factor 1 ($r = .13, p = .031$, 95% CI $[-.001, .26]$) in high RAS daters, as well as the interpersonal facet ($r = .13, p = .019$, 95% CI $[.01, .25]$) in low RAS daters, such that as these observer traits increased, so did the perceptions of using of dater dress in the assessment of vulnerability. Notably, however, as the CI for the relationship between Factor 1 on the SRP 4:SF and the employment of dater dress contained zero, results should be interpreted with caution.

Factor 2 of the SRP 4:SF was positively related to observers citing that they just knew it ($r = .13, p = .029$, 95% CI $[-.003, .25]$) in high RAS daters, while simultaneously demonstrating negative correlations to the use of facial expressions of high RAS daters ($r = -.12, p = .043$, 95% CI $[-.23, .000]$) and emotional appearance of both low ($r = -.12$,

$p = .043$, 95% CI $[-.23, .01]$) and high ($r = -.15$, $p = .012$, 95% CI $[-.26, -.01]$) RAS daters. Again, as the CIs of stating “I just knew” and using facial expressions in high RAS daters as well as the use of emotional appearance in low RAS daters all contained zero, these results should be interpreted with caution as a significant effect may not exist in the population. Further and irrespective of dater assertiveness levels, Factor 2 was also negatively related to mentioning the emotional appearance of daters in their judgements of vulnerability ($r = -.13$, $p = .018$, 95% CI $[-.25, -.02]$) to a small effect, such that as Factor 2 scores increased, the use of daters facial expressions decreased. Finally, the SRP 4:SF total score was positively related to observers saying they just knew it ($r = .13$, $p = .039$, 95% CI $[.01, .25]$), while the psychopathy subscale of the SD4 was negatively related to using the emotional appearance globally ($r = -.15$, $p = .010$, 95% CI $[-.26, -.05]$) as well as in low ($r = -.13$, $p = .031$, 95% CI $[-.23, -.02]$) and high ($r = -.17$, $p = .003$, 95% CI $[-.28, -.02]$) RAS daters. No other significant relationships between psychopathy and nonverbal behavioural cues during vulnerability appraisal emerged (see Table 22).

Table 22*Bivariate Correlations between Cues Utilized During Vulnerability Appraisal and Psychopathy Facets, Factors and Total Scores*

Cue	AFF ^b	INT ^a	LIF ^a	ANT ^b	F1 ^a	F2 ^a	SRP	SD4 ^b
Total # of cues mentioned								
Low RAS	.03	.04	-.01	-.17**	.04	-.08	-.02	-.04
High RAS	-.01	.02	-.02	-.12*	.01	-.08	-.03	-.06
Overall	-	-	-	-.15	-	-	-	-
I don't know								
Low RAS	-.02	.03	-.05	-.001	.004	.03	.02	.02
High RAS	-.06	.02	-.04	.08	-.01	.03	.01	.01
I just knew it								
Low RAS	.004	.01	.04	.07	.01	.05	.03	.05
High RAS	.04	.13*	.10	.07	.11	.13*	.13*	.07
Posture								
Low RAS	.002	-.03	-.04	-.18**	-.01	-.11	-.06	-.04
High RAS	-.01	-.04	-.03	-.07	-.03	-.05	-.04	-.06
Physical Appearance								
Low RAS	.02	.03	.03	-.05	.04	-.01	.02	-.004
High RAS	.06	.07	.03	.08	.07	-.02	.05	.05
Upper Body								
Low RAS	.06	.07	-.012	-.10	.07	-.04	.09	-.02
High RAS	.01	.02	-.05	-.08	.02	-.06	-.02	-.05
Dress								
Low RAS	-.01	.11	.14*	-.10	.10	.06	.08	.00
High RAS	.13*	.13*	.10	-.002	.13*	.07	.11	-.03

Cue	AFF ^b	INT ^a	LIF ^a	ANT ^b	F1 ^a	F2 ^a	SRP	SD4 ^b
Lower Body								
Low RAS	.05	.07	-.03	-.16**	.07	-.08	-.002	-.03
High RAS	.004	.02	-.03	-.06	.03	-.04	-.01	.02
Facial Expressions								
Low RAS	-.001	.01	-.01	-.16**	.01	-.08	-.03	.00
High RAS	-.09	-.05	-.03	-.19**	-.06	-.12*	-.09	-.11
Overall	-	-	-	-.18**	-	-	-	-
Emotional Appearance								
Low RAS	-.06	-.05	-.08	-.15*	-.06	-.12*	-.09	-.13*
High RAS	-.08	-.04	-.05	-.18*	-.06	-.15*	-.11	-.17**
Overall	-	-	-	-.18*	-	-.14*	-	-.15**

Note. Correlational analyses of overall variables were only conducted on cues when both low and high RAS groups had significant correlation coefficients with the same directionality. - = Correlational analysis not performed; AFF = Affect facet of the SRP 4:SF ($N = 300$); INT = Interpersonal facet of the SRP 4:SF ($N = 299$); LIF = Lifestyle facet of the SRP 4:SF ($N = 300$); ANT = Antisocial facet of the SRP 4:SF ($N = 300$); F1 = Factor 1 of the SRP 4:SF ($N = 300$); F2 = Factor 2 of the SRP 4:SF ($N = 300$); SRP = Total score from the SRP 4:SF ($N = 300$); SD4 = Psychopathy subscale from the SD4 ($N = 297$).

^aPearson's r ; ^bSpearman's ρ .

* $p < .05$. ** $p < .01$.

With regards to Machiavellianism, the antagonism subscale of the FFMI was negatively related to perceptions of using posture ($r_s = -.17, p = .004, 95\% \text{ CI } [-.28, -.07]$) in low RAS daters, as well as facial expressions in low ($r_s = -.12, p = .041, 95\% \text{ CI } [-.23, -.01]$) and high ($r_s = -.19, p = .001, 95\% \text{ CI } [-.31, -.08]$) RAS daters, while demonstrating a positive association with dress ($r_s = .15, p = .011, 95\% \text{ CI } [.04, .24]$) in high RAS daters. Overall, antagonism was negatively related facial expressions ($r_s = -.17, p = .003, 95\% \text{ CI } [-.28, -.05]$) such that as antagonism scores increased, the perceptions of using daters' facial expressions in the assessment of vulnerability decreased.

With small effect sizes, agency was negatively related to perceptions of utilizing upper body movements ($r = -.14, p = .020, 95\% \text{ CI } [-.25, -.02]$) in low RAS daters, facial expressions in low ($r = -.18, p = .002, 95\% \text{ CI } [-.29, -.06]$) and high ($r = -.14, p = .013, 95\% \text{ CI } [-.28, -.31]$) RAS daters, and emotional appearance of low ($r = -.16, p = .005, 95\% \text{ CI } [-.28, -.05]$) and high ($r = -.17, p = .002, 95\% \text{ CI } [-.28, -.07]$) RAS daters. Agency also demonstrated negative relationships with the overall use of facial expressions ($r = -.17, p = .003, 95\% \text{ CI } [-.27, -.06]$) and emotional appearance ($r = -.19, p = .001, 95\% \text{ CI } [-.31, -.08]$), regardless of dater assertiveness scores such that as agency scores increased, the perceived use of facial expression and emotional appearance during vulnerability appraisals, decreased. Planfulness was positively related to mentioning the emotional appearance of high RAS daters ($r = .12, p = .032, 95\% \text{ CI } [.02, .23]$), as well as posture in both low ($r = .20, p = .001, 95\% \text{ CI } [.09, .32]$) and high ($r = .12, p = .034, 95\% \text{ CI } [.01, .24]$) RAS daters. Finally, planfulness was also positively correlated with mentioning posture irrespective of assertiveness scores ($r = .17, p = .003, 95\% \text{ CI } [.06, .29]$), where,

as planfulness scores increase, so did the perceptions of relying on posture in generating vulnerability assessments.

As a unidimensional construct and again to a small effect, the FFMI total score was negatively related to observers mentioning facial expressions in both low ($r = -.18, p = .002, 95\% \text{ CI } [-.29, -.07]$) and high ($r = -.17, p = .003, 95\% \text{ CI } [-.28, -.09]$) RAS daters, as well as overall ($r = -.19, p = .001, 95\% \text{ CI } [-.13, -.07]$) such that as the total score of the FFMI increased, the perceived use of dater facial expression decreased. The Machiavellian subscale of the SD4 was negatively related to perceptions of using posture in high RAS daters ($r_s = -.12, p = .033, 95\% \text{ CI } [-.23, -.02]$) and emotional appearance in low RAS daters ($r_s = -.13, p = .026, 95\% \text{ CI } [-.23, -.03]$), while simultaneously demonstrating a positive association with dress in high RAS daters ($r_s = .13, p = .025, 95\% \text{ CI } [-.02, -.24]$). No other significant relationships between Machiavellianism and nonverbal behaviours employed during vulnerability appraisal were demonstrated (see Table 23).

Table 23*Bivariate Correlations between Cues Utilized During Vulnerability Appraisal and**Machiavellian Personality Traits*

Cue	ANT ^b	AGN ^a	PLA ^a	FFMI ^a	SD4 ^b
Total # of cues mentioned					
Low RAS	-.09	-.11	.09	-.10	-.02
High RAS	-.10	-.05	.11	-.06	-.03
I don't know					
Low RAS	.10	.04	-.09	.05	-.03
High RAS	.06	-.02	-.11	-.02	-.003
I just knew it					
Low RAS	-.01	.02	-.05	.01	-.07
High RAS	.09	.04	-.06	.07	-.05
Posture					
Low RAS	-.17**	-.02	.12**	-.04	-.08
High RAS	-.09	-.03	.12*	-.03	-.12*
Overall	-	-	.17**	-	-
Physical Appearance					
Low RAS	.03	.04	-.01	.04	.02
High RAS	.11	.01	.01	.07	.09
Upper Body					
Low RAS	-.04	-.14*	.09	-.10	.04
High RAS	-.11	-.04	.12*	-.05	-.06
Dress					
Low RAS	.11	-.08	-.08	-.01	.09
High RAS	.15*	-.05	-.02	.02	.13*
Lower Body					
Low RAS	-.05	-.11	.08	-.09	-.03
High RAS	-.06	-.03	.07	-.05	-.05
Facial Expressions					
Low RAS	-.12*	-.18**	.02	-.18**	-.01
High RAS	-.19**	-.14**	.08	-.17**	-.05
Overall	-.17**	-.17**	-	-.19**	-
Emotional Appearance					
Low RAS	-.16*	-.05	.09	-.09	-.13*
High RAS	-.18**	.03	.12*	-.02	-.06
Overall	-.19**	-	-	-	-

Note. Correlational analyses of overall variables were only conducted on cues in which both low and high RAS groups had significant correlation coefficients with the same directionality. - = Correlational analysis not performed; ANT = Antagonism subscale from the FFMI ($N = 299$); AGN = Agency subscale from the FFMI ($N = 299$); PLA = Planfulness subscale from the FFMI ($N = 299$); FFMI = Total score from the FFMI ($N = 299$); SD4 = Machiavellian subscale from the SD4 ($N = 297$).

^a Pearson's r ; ^b Spearman's rho.

* $p < .05$. ** $p < .01$.

The next set of bivariate correlations were conducted to determine how sadistic personality traits relate to the perceptions of nonverbal behaviours utilized during the assessment of sexual and violent vulnerability in others. The direct-verbal subscale of the CAST was significantly positively correlated to dress in both low ($r = .14, p = .014, 95\% \text{ CI } [.02, .27]$) and high ($r = .12, p = .033, 95\% \text{ CI } [.004, .24]$) RAS daters, such that in generating vulnerability assessments, as direct-verbal scores increased, so did the use of considering how a dater dressed, albeit to a small effect. However, this relationship was not demonstrated when dress was analyzed on a global, or overall level ($r = .09, p = .12, 95\% \text{ CI } [-.02, .20]$). The vicarious subscale of the CAST was negatively related to both emotional appearance ($r = -.17, p = .004, 95\% \text{ CI } [-.27, -.07]$) and facial expressions ($r = -.13, p = .030, 95\% \text{ CI } [-.24, -.01]$) in high RAS daters, while simultaneously demonstrating positive relationships to physical appearance in both low ($r = .14, p = .018, 95\% \text{ CI } [.02, .25]$) and high ($r = .13, p = .029, 95\% \text{ CI } [.003, .24]$) RAS daters. Irrespective of assertiveness level, vicarious sadism was positively related to the use of physical appearance ($r = .14, p = .015, 95\% \text{ CI } [.02, .27]$) in the assessment of vulnerability, to a small effect. Finally, and again with a small effect, the direct-physical subscale of the CAST was positively related to observers citing they 'just knew it' for high RAS daters ($r = .15, p = .011, 95\% \text{ CI } [.03, .25]$). No other significant relationships

between sadistic personality traits nonverbal behaviours used in vulnerability appraisal were noted (see Table 24).

Table 24*Bivariate Correlations between Cues Utilized During Vulnerability Appraisal and**Sadistic Personality Traits*

Cue	PD ^b	VD ^a	VI ^a	CAST ^a	SD4 ^a
Total # of cues mentioned					
Low RAS	-.03	-.01	.05	-.01	.03
High RAS	-.04	-.02	.06	-.01	.01
I don't know					
Low RAS	.04	.02	-.06	.01	.03
High RAS	.06	.04	-.09	-.004	.01
I just knew it					
Low RAS	.02	-.01	.02	.01	.02
High RAS	.15*	-.01	.04	.06	.07
Posture					
Low RAS	-.05	-.05	.01	-.04	.02
High RAS	-.03	-.06	.01	-.03	-.05
Physical Appearance					
Low RAS	-.004	.03	.14*	.07	.09
High RAS	.03	.09	.13*	.13	.09
Overall	-	-	.14*	-	-
Upper Body					
Low RAS	.03	-.03	.09	.03	.08
High RAS	.001	-.04	.07	-.004	.01
Dress					
Low RAS	-.02	.14*	.004	.06	.001
High RAS	.09	.12*	.03	.07	.03
Overall ^c	-	.09 ^b	-	-	-
Lower Body					
Low RAS	-.003	.03	.05	.03	.04
High RAS	.03	-.01	.10	.05	.06
Facial Expressions					
Low RAS	.06	-.04	-.03	-.06	-.002
High RAS	-.13*	-.07	-.02	-.08	-.07
Emotional Appearance					
Low RAS	-.08	-.07	-.04	-.10	-.08
High RAS	-.17**	-.10	-.01	-.11	-.07

Note. Correlational analyses of overall variables were only conducted on cues in which both low and high RAS groups had significant correlation coefficients with the same

directionality. - = Correlational analysis not performed; PD = Physical-Direct subscale from the CAST ($N = 301$); VD = Verbal-Direct from the CAST ($N = 301$); VI= Vicarious subscale from the CAST ($N = 301$); CAST = Total score from the CAST ($N = 301$); SD4 = Sadism subscale from the SD4 ($N = 297$).

^aPearson's r ; ^bSpearman's rho; ^cRanked data due to outlier, so Spearman's rho was utilized.

* $p < .05$. ** $p < .01$.

The narcissism subscale of the SD4 demonstrated a positive relationship with observers indicating they “just knew it” in high RAS daters ($r = .17, p = .004$, 95% CI [.07, .25]) as well as negative associations with both the perceived utilization of facial expressions in low ($r = -.12, p = .041$, 95% CI [-.23, .10]) and high ($r = -.16, p = .006$, 95% CI [-.28, -.03]) RAS daters, and posture in low ($r = -.12, p = .039$, 95% CI [-.23, -.02]) and high ($r = -.17, p = .003$, 95% CI [-.28, -.06]) RAS daters. While similar negative correlations were demonstrated for the global use of posture ($r = -.16, p = .007$, 95% CI [-.26, -.05]) and facial expressions, ($r = -.15, p = .010$, 95% CI [-.26, -.04]), it is noteworthy to mention that in low RAS daters, the CI for facial expression contained zero, which may indicate that a significant association does not exist in the population. Finally, narcissism, as measured by the NPI-16, demonstrated a positive relationship with observers indicating that they “just knew it” in high RAS daters ($r = .12, p = .045$, 95% CI [.02, .22]) such that as narcissism scores increased, so did the frequency in which observers indicated they “just knew” how to rate the vulnerability levels of high RAS daters. No other significant relationships between narcissism and nonverbal behaviours emerged (see Table 25).

Table 25*Bivariate Correlations between Cues Utilized During Vulnerability Appraisal and**Narcissistic Personality Traits*

Cue	NPI ^a	SD4 ^a
Total # of cues mentioned		
Low RAS	-.07	-.08
High RAS	-.05	-.09
I don't know		
Low RAS	-.05	.05
High RAS	-.07	.06
I just knew it		
Low RAS	.05	.08
High RAS	.12*	.17**
Posture		
Low RAS	-.09	-.12*
High RAS	-.10	-.18**
Overall	-	-.16**
Physical Appearance		
Low RAS	-.04	.09
High RAS	.04	.06
Upper Body		
Low RAS	-.06	-.07
High RAS	-.05	-.08
Dress		
Low RAS	.03	.05
High RAS	.04	.04
Lower Body		
Low RAS	-.02	-.10
High RAS	.01	-.03
Facial Expressions		
Low RAS	-.10	-.12*
High RAS	-.11	-.16**
Overall	-	-.15**
Emotional Appearance		
Low RAS	-.10	-.09
High RAS	-.05	-.07

Note. Correlational analyses of overall variables were only conducted on cues in which both low and high RAS groups had significant correlation coefficients with the same

directionality. - = Correlational analysis not performed; NPI = Total score from the NPI-16 ($N = 303$); SD4 = Narcissism subscale from the SD4 ($N = 297$).

^aPearson's r ; ^bSpearman's ρ .

* $p < .05$. ** $p < .01$.

In relation to the HEXACO-60 personality traits and perceived information used in the decision-making process, the honesty-humility subscale demonstrated the most associations with nonverbal cues. Specifically, the honesty-humility dimension was positively related to the total number of nonverbal behaviours mentioned in both low ($r_s = .16, p = .006, 95\% \text{ CI } [.05, .26]$) and high ($r_s = .15, p = .012, 95\% \text{ CI } [.04, .25]$) RAS daters, posture in low ($r_s = .17, p = .004, 95\% \text{ CI } [.05, .27]$) and high ($r_s = .12, p = .040, 95\% \text{ CI } [-.001, .23]$) RAS daters, facial expressions in low ($r_s = .18, p < .001, 95\% \text{ CI } [.07, .30]$) and high ($r_s = .19, p < .001, 95\% \text{ CI } [.08, .30]$) RAS daters, emotional appearance in low ($r_s = .21, p < .001, 95\% \text{ CI } [.09, .31]$) and high ($r_s = .20, p < .001, 95\% \text{ CI } [.09, .30]$) RAS daters, upper body movements in high RAS daters ($r_s = .16, p = .007, 95\% \text{ CI } [.04, .26]$), and lower body movements in low RAS daters ($r_s = .13, p = .029, 95\% \text{ CI } [.01, .24]$), all with small effect sizes. Similarly, regardless of dater assertiveness score, positive relationships were demonstrated between honesty-humility and the total number of cues mentioned ($r_s = .15, p = .008, 95\% \text{ CI } [.05, .27]$), posture ($r_s = .17, p = .004, 95\% \text{ CI } [.06, .28]$), facial expressions ($r_s = .20, p < .001, 95\% \text{ CI } [.10, .31]$), and emotional appearance ($r_s = .22, p < .001, 95\% \text{ CI } [.11, .34]$), such that when determining vulnerability in others, as honesty-humility increased, so did the total number of nonverbal cues and the utilization of posture, facial expressions and emotional appearance. Notably, however, the CI for posture in high RAS daters contained a zero, which again indicates that significance should be interpreted with caution.

The openness subscale of the HEXACO-60 was positively correlated with both the total number of nonverbal cues used ($r = .12, p = .042, 95\% \text{ CI } [-.01, .24]$) and how the lower body moved ($r = .13, p = .011, 95\% \text{ CI } [.01, .26]$) in low RAS daters, and positively related to using the emotional expression of high RAS daters ($r = .12, p = .044, 95\% \text{ CI } [-.09, .22]$), although again, each effect size was small and both CIs for the number of cues utilized and emotional appearance contained zero. The emotionality subscale demonstrated significantly positive associations with the emotional appearance of low RAS daters ($r = .12, p = .033, 95\% \text{ CI } [.003, .24]$), and the facial expressions of both low ($r = .16, p = .007, 95\% \text{ CI } [.04, .27]$) and high ($r = .13, p = .021, 95\% \text{ CI } [.01, .26]$) RAS daters. Unsurprisingly, emotionality was positively correlated to the use of facial expressions, regardless of dater assertiveness score ($r = .15, p = .009, 95\% \text{ CI } [.04, .26]$). To a small effect, extraversion was negatively correlated to the use of facial expressions in low RAS daters ($r = -.12, p = .043, 95\% \text{ CI } [-.22, -.003]$) such that as extraversion increased, in low RAS daters, facial expressions were less likely to be cited in the appraisal of vulnerability. Finally, conscientiousness was positively related to using the emotional appearance of high RAS daters in the vulnerability decision-making process ($r = .15, p = .009, 95\% \text{ CI } [.03, .26]$). No other significant relationships between the HEXACO personality traits and nonverbal behaviours used during vulnerability appraisal were noted (see Table 26).

Table 26*Bivariate Correlations between Cues Utilized During Vulnerability Appraisal and HEXACO Personality Traits*

Cue	HH ^b	E ^a	X ^a	A ^a	C ^a	O ^a
Total # of cues mentioned						
Low RAS	.16*	.09	-.07	.04	.04	.12*
High RAS	.15*	.08	-.04	.02	.06	.04
Overall	.15**	-	-	-	-	-
I don't know						
Low RAS	-.07	-.03	-.01	-.05	-.03	.04
High RAS	-.07	-.004	-.001	-.01	-.06	.02
I just knew it						
Low RAS	.001	-.03	.01	.02	.02	-.01
High RAS	-.07	-.06	.06	.002	-.08	-.03
Posture						
Low RAS	.17**	.07	-.02	.06	.05	.07
High RAS	.12*	.06	.001	.001	.06	-.003
Overall	.17**	-	-	-	-	-
Physical Appearance						
Low RAS	.02	-.07	.03	.04	.03	.05
High RAS	-.03	-.07	-.02	-.02	.01	.004
Upper Body						
Low RAS	.05	.07	-.10	.01	.05	.07
High RAS	.16**	.09	-.05	.07	.09	.04

Cue	HH ^b	E ^a	X ^a	A ^a	C ^a	O ^a
Dress						
Low RAS	-.02	-.03	-.04	-.06	-.06	.088
High RAS	-.06	-.02	-.02	-.10	-.10	-.01
Lower Body						
Low RAS	-.12*	.09	-.10	-.01	.03	.13*
High RAS	.05	.07	-.05	-.05	.02	.04
Facial Expressions						
Low RAS	.18**	.16**	-.12	.06	-.01	.07
High RAS	.19**	.13*	-.11	.05	.01	-.01
Overall	.20**	.15**	-	-	-	-
Emotional Appearance						
Low RAS	.21**	.12*	-.001	.05	.06	.10
High RAS	.20**	.09	.06	.06	.15**	.12*
Overall	.22**	-	-	-	-	-

Note. Correlational analyses of overall variables were only conducted on cues in which both low and high RAS groups had significant correlation coefficients with the same directionality. - = Correlational analysis not performed; HH = Honesty-Humility dimension of the HEXACO-60; E = Emotionality dimension of the HEXACO-60; X = Extraversion dimension of the HEXACO-60; A = Agreeableness dimension of the HEXACO-60; C = Conscientious dimension of the HEXACO-60; O = Openness dimension of the HEXACO-60. $N = 298$.

^aPearson's r ; ^bSpearman's ρ .

* $p < .05$. ** $p < .01$.

The final series of exploratory bivariate correlations were conducted to assess if the perceived cues utilized during vulnerability appraisal vary by victimization type (i.e., sexual, violent; RQ5). Results indicated that to a small effect, in low assertive women, sexual vulnerability is positively related to the total number of cues mentioned by observers ($r = .11, p = .050, 95\% \text{ CI } [.01, .23]$) and physical appearance ($r = .18, p = .002, 95\% \text{ CI } [.07, .29]$), while negatively related to observers indicating they didn't know what information they used in their assessments of vulnerability ($r = -.12, p = .033, 95\% \text{ CI } [-.24, -.02]$). Simply put, in low assertive women, sexual vulnerability ratings increased as the number of cues employed increased, and if the dater appeared more physically attractive, while sexual vulnerability decreased when the observer didn't know how they came to their vulnerability rating. No other significant relationship between cues utilized and vulnerability in either low or high RAS participants was noted (see Tables 27 and 28, respectively).

Table 27

Bivariate Correlations between Cues Utilized During Vulnerability Appraisal by Type of Vulnerability for Low RAS Daters

Cue	Sexual Vulnerability ^a	Violent Vulnerability ^a
Total # of cues mentioned	.11*	.07
I don't know	-.12*	-.09
I just knew it	-.002	.07
Posture	.08	.07
Physical Appearance	.18**	.07
Upper Body	.08	.06
Dress	.06	.01
Lower Body	.06	.02
Facial Expressions	.06	.07
Emotional Appearance	.03	.02

Note. $N = 298$.

^aPearson's r .

* $p < .05$. ** $p < .01$.

Table 28

Bivariate Correlations between Cues Utilized During Vulnerability Appraisal by Type of Vulnerability for High RAS Daters

Cue	Sexual Vulnerability ^a	Violent Vulnerability ^a
Total # of cues mentioned	.05	-.01
I don't know	.004	.03
I just knew it	.04	.10
Posture	.01	-.01
Physical Appearance	.08	.01
Upper Body	.06	.01
Dress	.04	.02
Lower Body	.04	.02
Facial Expressions	.003	-.03
Emotional Appearance	-.01	-.04

Note. $N = 298$.

^aPearson's r .

Study 2: Discussion

With research to suggest that gait is a key indicator of vulnerability (Grayson & Stein, 1981; Gunns et al., 2002; Parks et al., 2008) and that individuals with dark personality traits demonstrate an adeptness at identifying vulnerability in others (Book et al., 2013; Ritchie et al., 2019), the purpose of Study 2 was twofold: 1) to assess how individuals with dark personality traits perceive vulnerability in others; and 2) to determine which nonverbal cues other than gait are perceived to be utilized during the appraisal of vulnerability.

Observer Personality Factors and Vulnerability

Accuracy of Vulnerability Appraisal

With overlapping, but conceptually distinct constructs, the Dark Tetrad traits are driven by instrumental goals and are marked by engagement in high levels of manipulation, deception and control-seeking, and yet, despite these adverse behaviours, are seemingly able to engage in successful exploitation of others. Accordingly, many have sought to uncover the underlying mechanisms that may make these individuals such adept social predators. In particular, with facial expressions acting as one of the foundational elements of social connection, many researchers have examined how the dark traits, specifically psychopathy, interpret and utilize emotional expressions. On one hand, some have identified that individuals with psychopathic traits experience emotion recognition deficits as a whole (e.g., Hastings et al., 2008; Prado et al., 2015). On the other hand, others have demonstrated that psychopathic traits are associated with increased accuracy in identifying the intensity of facial expressions, specifically for fearful faces (Book et al., 2007), to which similar findings have been reported in youth,

where those with callous/unemotional traits have displayed an acute ability to identify fear in others (Woodworth & Waschbusch, 2007). Certainly, being able to identify negative emotions such as fear in others would be invaluable when trying to identify those who may be vulnerable to exploitation and/or victimization.

Despite the literature on psychopathy and facial recognition being mixed, psychopathic traits have been associated with accurately identifying previously victimized individuals and those vulnerable to victimization (e.g., Book et al., 2004, 2013; Denardo et al., 2018; Wheeler et al., 2009). Further, provided that psychopathy, Machiavellianism and sadism are strongly positively correlated (i.e., r s ranging from .61 to .80; Porter et al., 2014; Ritchie et al., 2019), it would be reasonable to assume that the latter two dark traits would demonstrate a similar pattern of accuracy in identifying victims versus nonvictims. Therefore, given that the dark traits may experience emotional recognition deficits, in addition to facial expressions being a small, albeit important, piece of nonverbal communication, research has further considered the means in which those with dark traits are able to identify victims and/or vulnerability in others. In this line of inquiry, the dark traits have demonstrated to be successful in distinguishing between victims and nonvictims by solely relying on an individuals' gait. However, while gait has been studied relatively extensively, the accuracy in which dark personalities are able to detect vulnerability using other nonverbal behaviours has been left largely ignored. As such, the first and second research questions sought to examine how observer personality, including Dark Tetrad and HEXACO traits, are associated with the ability to accurately detect vulnerability to sexual and violent victimization in women, where it was hypothesized that psychopathy, Machiavellianism, sadism and honesty-humility would be

related to accurately identifying vulnerability to both types of victimization with psychopathy being the most salient predictor.

Unexpectedly, psychopathy, sadism, and honesty-humility were unrelated to accuracy, while the planfulness dimension of Machiavellianism and conscientiousness of the HEXACO were associated with accurately identifying self-ascribed sexual vulnerability in low assertive women. This said, both planfulness and conscientiousness were not predictive of accuracy of sexual vulnerability in low assertive women after accounting for dater attractiveness and observer gender. Further, both planfulness and conscientiousness were related to poorer accuracy in identifying sexual vulnerability in high assertive women. This may suggest that instead of being accurate in their judgements, those high in planfulness and conscientiousness viewed all women as vulnerable to sexual victimization and only when women also viewed themselves as highly vulnerable (i.e., low assertive women), did this result in “accurately” identifying vulnerability.

While this is in alignment with Black and colleagues (2014) findings that those high on Machiavellianism, narcissism and psychopathy were no better at identifying vulnerability than their lower scoring counterparts, one important distinction lies between the aforementioned study, the current study, and other research within the area. Specifically, the current study and Black et al. (2014) employ a framework where perceived vulnerability to victimization is examined irrespective of past history, whereas other researchers have utilized assessments of vulnerability through the lens of prior victimization. Given that past victimization can be objective and dichotomized, whereas vulnerability to victimization is more likely to be subjective and continuous, it's possible

that daters did not perceive themselves as vulnerable to sexual and/or violent victimization, while observers may have (or vice versa). For example, one may state they do not feel vulnerable even though they had been previously victimized, so in this circumstance, an observer may be able to accurately identify victimization history and accordingly, may allocate a high vulnerability rating, creating a large discrepancy value.

Vulnerability ratings, while providing key insight into the perceptions of the self and others, is susceptible to bias. Zero-acquaintance research, as employed in the present study, traditionally relies on two distinct rating categories: consensus, or how closely related observers' assessments are, and self-other agreement, or the degree of agreement between self- and observer- assessments (Yeagley et al., 2007). Consensus ratings have consistently demonstrated to have higher correlations in comparison to self-other agreement because all assessments are made using identical sources of information (e.g., 40-second video-clip). Alternatively, in self-other agreement, the target and observer must rely on different sources of information in their assessments; for example, the observer may only have access to a short audio/video clip, while the target has access to personal history, cultural norms, and context (e.g., Funder, 1999; Kenny, 1994; Yeagley et al., 2007).

In Yeagley and colleagues (2007) study on ratings of self-esteem, social dominance and satisfaction with life, both consensus and self-other agreement ratings were made more easily in male targets than females, with male targets reaching self-other agreement on satisfaction with life. Alternatively, Ambady et al. (1999) found that when viewing one- and 10-second video-only clips (i.e., no audio), observers were more accurate in assessments of target sexuality than when observers viewed still photographs,

with women being judged more accurately overall in comparison to males. Further, in their study assessing perceived vulnerability to non-consensual sexual touching using both point-light and full-body videos of female walkers, Sakaguchi and Hasegawa (2006) found that in point-light videos, self-other agreement was low, while in full-body videos, self-other agreement was higher. Interestingly, when generating vulnerability assessments, in point-light displays, observers relied on perceived personality traits, while in full-body videos, observers relied more on gait and physical appearance (Sakaguchi & Hasegawa, 2006).

To this end, Yeagley et al. (2007) have argued that accuracy of identifying traits in others depends on observer skillset, experience, and motivation, the expressiveness of the target, and the circumstances in which the interaction occurs. Certainly, this is in alignment with the ecological approach to social perception theory and would imply that those high in dark traits should be more accurate in their assessments of vulnerability and may utilize different approaches that are contingent upon social context when scouting potential victims. For example, assessments of sexual vulnerability may be easier in female targets if they are viewed as sexual beings, while assessments of violent or general vulnerability may be easier in male targets if traits like dominance or life satisfaction are more readily available to interpret. This said, it's important to consider that instead of being more accurate in identifying self-ascribed vulnerable peoples, perhaps dark personalities just view everyone as vulnerable.

Perceptions of Vulnerability

The tendency to view others as vulnerable would undoubtedly provide some benefits to those with dark personality types. For example, it would widen the pool of

individuals to which they may seek to exploit and could provide the experience and practice needed to identify which strategies of manipulation and deception work best and in what contexts, all of which may enhance successful social predation. Rather than be selective with whom they choose to approach and exploit, those with dark personalities may benefit from having an arsenal of strategies at their disposal as well as being readily able to adjust and respond to different interactions fluidly. In support of this, Jonason and Webster (2012) noted that Dark Triad personalities were more likely to use a repertoire of tactics (e.g., charm, coercion, seduction, play hard ball) when trying to manipulate or deceive others, and varied their tactic(s) depending on whom they were interacting with.

With some research to suggest that the dark traits, in particular psychopathy, are not associated with accuracy in assessments of vulnerability, but rather view everyone as vulnerable (e.g., Black et al., 2014; Brankley & Rule, 2014), the relationships between observer personality and perceptions of vulnerability were examined. Results indicated that only the planfulness dimension of Machiavellianism and conscientiousness were associated with an increased propensity to view others as vulnerable to both sexual and violent victimization. Though psychopathy being unrelated to viewing everyone as vulnerable is in alignment with Book and colleagues (2004) study, the positive associations between planfulness, conscientiousness and vulnerability ratings were unexpected.

One potential explanation corresponds to the tendency for Machiavellian personality types to be cynical, sardonic, and view others as neurotic, depressed, and anxious (Black et al., 2014), while being less open and having limited interpersonal skills (Rauthmann, 2012). That is, if Machiavellian individuals are more likely to hold negative

other views, then it would make sense for planfulness, characterized by deliberation and order, to be associated with viewing others as more vulnerable overall. This said, given that both psychopathy and narcissism are also prone to viewing others in a negative fashion (e.g., neurotic, depressed, anxious, introverted; Black et al., 2014) but in the present study, did not view everyone as vulnerable, it stands to reason that an alternative, more plausible explanation exists. Specifically, as planfulness is positively correlated with the lower order traits that comprise conscientiousness, namely competence, order, dutifulness, achievement, self-discipline and deliberation (r 's ranging from .42 to .77; Collison et al., 2018), while Machiavellianism, psychopathy and sadism, as unidimensional constructs, are negatively related to these facets (Kowalski et al., 2019; Book et al., 2016), it is possible that conscientiousness is at the core of viewing others as vulnerable, with planfulness demonstrating similar patterns due to its association with conscientiousness.

Indeed, conscientiousness is strongly related to determination, work ethic, perseverance, grit, self-control and achievement striving (Jackson et al., 2009, 2010). Further, individuals high in conscientiousness are more likely to have academic (e.g., higher grades; Nofle & Robbins, 2007; Paunonen & Ashton, 2001) and career (e.g., higher wages, more promotions; Ng et al., 2005; Spurk & Abele, 2011) success. In many circumstances, one's success may be contingent upon another's. For example, in many universities, courses are curved, meaning that an individual's grade is relative to how other students have done; in the workforce, multiple people are often competing for a position or promotion within a company. Therefore, it would make sense that in the pursuit of achievement, those high in conscientiousness may have an enhanced ability to

detect potential threats posed by others, as well as being able to identify ‘harmless’ individuals, or those who are not threatening to their success. In this sense, given that college-aged women are one of the most likely demographics to be sexual assaulted (Fuller, et al., 2017; Muehlenhard, et al., 2017), it is likely that conscientious individuals based their vulnerability assessments on the most salient piece of information available to them (i.e., gender). In fact, in judging vulnerability to any type of victimization more severe than bullying, inmates frequently rationalized the targets sex (i.e., being female) as being an indicator for future victimhood over and above other nonverbal cues (e.g., gait, clothing, posture, age, attractiveness; Book et al., 2013).

Although results did not demonstrate that the Dark Tetrad traits are accurately able to detect vulnerable women, nor were they more likely to view all women as vulnerable, it still remains plausible, and likely, that they are able to detect vulnerability even when a potential target does not acknowledge this vulnerability. Indeed, low assertive women were perceived as more vulnerable to sexual and violent victimization than their high scoring counterparts, which would indicate that at the very least, observers are using some cue(s) to differentiate between these groups when assessing vulnerability.

Perceived Personality Factors and Vulnerability

With literature to suggest that vulnerable individuals are submissive (Beauregard et al., 2007; Ritchie, 2016), anxious (Olweus, 1994), depressed (Selkin, 1982) and have low levels of self-esteem (Goetz et al., 2012; Olweus, 1994; Selkin, 1982), extraversion (Chung & Charles, 2016; Glasø et al., 2007), confidence (Goetz et al., 2012; Murzynski & Degelman, 1996) and assertiveness (Classen et al., 2001; Corbin et al., 2001), this study also sought to examine the perceived personality traits of women who appear

vulnerable to sexual and violent victimization. Results are in congruence with previously identified indicators of vulnerability such that this study found that non-assertive women appeared more vulnerable to both sexual and violent victimization, and overall, were perceived as having lower self-esteem and being less assertive, dominant, extraverted, open, confident, and relaxed as well as appearing more submissive, anxious, and naïve than high assertive women.

When comparing the perceived personality differences between assertive versus non-assertive women, it was found that in low assertive women, appearing warm or naïve was related to appearing sexually vulnerable. This is in alignment with literature suggesting that some women may be selected for sexual victimization if they appear nurturing or naïve (e.g., Beaugard et al., 2007; Stevens, 1994). Certainly, it is possible that in appearing assertive, one is less likely to be perceived as kind, caring or willing to help while simultaneously appearing worldly or having more experience. In addition, perceived submissiveness, and appearing unrelaxed and non-dominant was related to sexual and violent vulnerability for low assertive women only, at least to a small effect. Given that dominance is considered to be the opposite of submissiveness, this finding is not surprising. With regards to degree of relaxation however, it is plausible that women low in assertiveness are generally more uncomfortable in certain interpersonal situations. For example, the women in the videos were told they were recording a ‘dating biography’ and to act as naturally as possible- as if their videos were going to be used on a dating website or television show. If one felt as though they were uncertain, unconfident or anxious in their responses/ how they were portraying themselves, it is reasonable that they may inherently appear more unrelaxed. Indeed, Gilbert and Allan (1994) have stated

that assertiveness is the ability to express oneself without experiencing feelings of emotional distress (e.g., anxiety, anger) in various social contexts.

Further, the fact that appearing non-dominant, submissive, and unrelaxed was only related to vulnerability in low assertive women suggests that perhaps these traits in particular are more identifiable or prevalent in women with low levels of assertiveness. Accordingly, if low levels of assertiveness are related to feelings of discomfort it is understandable that appearing anxious was also related to sexual vulnerability in low assertive women. Women may feel more anxious in situations where they perceive that they are unable to control an outcome or act in an assertive manner. This is in alignment with Sarkova and colleagues (2013) study where adolescents experienced more anxiety in social situations where assertive behaviour was necessary (e.g., asking a person to stop doing something, refusing a request, expressing romantic feelings to another) and subsequently, were less likely to engage in these types of interpersonal contexts. Therefore, a potential explanation for why anxiousness was only related to sexual vulnerability in low assertive women could be due to the context in which the women in the videos were provided. Specifically, given that the context of the videos were related to dating in conjunction with sexual assertiveness being a protective factor against sexual assault (e.g., Brecklin & Ulman, 2005; Greene & Navarro, 1998; Simpson Rowe et al., 2015), low assertive women may have inadvertently appeared more anxious due to feelings of potential uncertainty or lack of experience in being assertive in intimate/romantic relationships or with sexual advances.

This uncertainty or discomfort in some social interactions may also serve to explain why appearing anxious was related to being appraised as vulnerable to violent

victimization regardless of whether one was low or high on assertiveness. Provided that sexual victimization may be perceived as a more prevalent threat in women than in men, while the opposite may be true for violent victimization, it stands to reason that overall, women were perceived as vulnerable to violent victimization if they appeared anxious due to their perceived lack of 'experience' or practice of being assertive in nonsexual violent situations. Indeed, some researchers have demonstrated that assertiveness may be a learned skill where one can act assertively in some contexts while being unsure how to act assertively in novel situations (e.g., Murphy & Smith, 2010).

Interestingly, low levels of perceived assertiveness were only related to sexual vulnerability in high assertive women. On one hand, if assertiveness were to be identifiable via verbal signals while submissiveness via nonverbal signals, the (non) relations between vulnerability, and perceived assertiveness and submissiveness in low and high assertive women makes sense. On the other hand, assertiveness being primarily verbal whilst submissiveness being nonverbal does not explain the current finding. Though it is possible that given its small effect size, this finding is erroneous, it is also feasible (and likely) that high assertive women do not display the same behaviours as low assertive women and therefore, observers must utilize different cues when making assumptions of others. In the absence of relevant verbal or nonverbal cues, personal experience or other cues such as gender, may be utilized. For example, given that sexual violence is highly prevalent in women and that low levels of sexual assertiveness are strongly related to past sexual victimization and vulnerability (e.g., Greene & Navarro, 1998; Kelley et al, 2016; Livingston et al., 2007), if an observer solely relied on personal experience or the gender of the target, it would make sense that they may view a woman

to be lacking in assertiveness and therefore sexually vulnerable. Whereas, if a target were to display enough vulnerable behaviours, the observer may primarily rely on these cues when drawing their assumptions of personality and/or vulnerability rather than drawing upon personal experience. This may also explain why appearing submissive was not related to sexual or violent vulnerability in high assertive women. That is, if one did not display behavioural cues that may indicate their submissiveness, then in theory, they would not appear vulnerable.

While this study suggests that some personality traits may only be relevant to sexual or violent vulnerability in certain situations (i.e., when one is either low or high on assertiveness), other traits appear to be applicable in perceptions of vulnerability to all women, regardless of how assertive they may be. Specifically, appearing unconfident or as though one had low self-esteem was related to appearing vulnerable to both sexual and violent victimization in low and high assertive women. Self-esteem and confidence go hand in hand much in the same way that assertiveness and submissiveness do. That is, self-esteem and confidence have demonstrated positive associations (Campbell, 1990; Coudevylle et al., 2011) where on one hand, self-esteem refers to the positive or negative emotions one may feel about themselves (Rosenberg, 1965), while on the other hand, confidence is related to one's belief in their abilities during different tasks and in different contexts (Merriam-Webster, n.d.). It would make sense then, that someone with negative intentions may actively seek out another who appears to be lacking in self-esteem and/or confidence as they may be more likely to be accommodating and/or not stick up for themselves.

Indeed, lower levels of self-esteem are often found in victims of bullying (Olweus, 1994) and sexual violence (Goetz et al., 2012; Jehu & Gazan, 1983; Selkin, 1978), while low levels of confidence have been found in women perceived to be sexually vulnerable (Murzynski & Degelman, 1996) and in adolescent girls where intimate relationships are marred by warning sign behaviours (e.g., checking phone, putdowns) from their partners (Murphy, 2011). Although in the present study both self-esteem and confidence had small effect sizes, secondary to dominance, low self-esteem had the largest effect sizes of the remaining perceived personality traits, while confidence also displayed relatively large effect sizes in comparison, underscoring the relevance of these personality traits in various interpersonal contexts.

Overall, the current study demonstrates that observers are able to differentiate between assertive and non-assertive women, with key perceived personality distinctions existing between these two groups, and that as a whole, non-assertive women are more likely to be viewed as sexually and violently vulnerable. These findings are indicative of some underlying mechanism(s) and/or cues that observers are able to utilize when making assessments of others. Provided that this study used videos without sound, it is reasonable to assume that observers are able to make accurate assumptions of assertiveness, as well as judgments of vulnerability and other personality traits based solely on nonverbal communications or nonverbal cues.

Nonverbal Behavioural Vulnerability Cues

The current study also sought to examine if individual differences impact the perceptions of nonverbal behaviours (apart from gait) utilized during the assessment of vulnerability. Specifically, this study explored how individuals with dark and HEXACO

personality traits utilize nonverbal behaviours, and globally, if the nonverbal cues perceived to be utilized vary depending on the type of victimization (i.e., sexual, violent). Results suggested that overall, observers were more likely to cite using physical appearance, dress, and lower body movements in low assertive daters, while in high assertive daters, observers were more likely to mention using facial expressions when determining vulnerability. Considering that nonverbal behavioural differences emerged between low and high assertive daters in Study 1, it is not altogether surprising that there are differences in the nonverbal cues identified during vulnerability appraisals. As found in Study 1, low assertive individuals were more likely to engage in leg movements, and though the cue “lower body” may entail a number of different sub-movements (e.g., foot/leg crossing, foot/leg movements), it is possible that full leg movements were the most salient factor for observers, at least in low assertive women. Alternatively, considering that Study 1 also demonstrated an approaching significant relationship between high assertive women and engaging in animated behaviour (including facial expressiveness), it is within the realm of reason that observers would be able to pick up on and cite this specific cue when assessing vulnerability.

With regards to the dark traits and with small effects, observers scoring high on facet 2 (interpersonal), Factor 2, and total psychopathy as well as those scoring high on narcissism and physical-direct sadism, were more likely to indicate using intuition (i.e., “I just knew it”) when making assessments of vulnerability in high assertive women. This is in alignment with past research indicating that student samples may be unable to identify the information or cues used when making decisions of vulnerability (e.g., Ritchie, 2016; Wheeler et al., 2009). Further, and in somewhat congruence with this, many of the

observers with dark traits indicated using non-behavioural cues (i.e., physical appearance, dress) during their appraisals; that is, observers high on facet 3 (lifestyle) psychopathy and verbal-direct sadism as well as those high on facet 1 (affective), facet 2 (interpersonal) and Factor 1 psychopathy, antagonism, Machiavellianism, and verbal-direct sadism were more likely to cite daters' dress when assessing low and high assertive women respectively, while vicarious sadism was related to citing physical appearance in both low and high assertive women. Certainly, in the absence of vulnerable cues or when making assessments of vulnerability towards sexual violence specifically, it is reasonable that one may rely on the physical attractiveness and/or dress of the target.

In their study using a sample of offenders however, Book and colleagues (2013) found that psychopathy was unrelated to identifying clothing and attractiveness as cues of vulnerability, but rather psychopathy, specifically Factor 1 psychopathy, was related to citing gait as an indicator of vulnerability, with the authors suggesting that offenders may have more "practice" in the detection of vulnerability and accordingly, they are able to identify vulnerable cues. Certainly, it could be argued that with more practice or repetition, behaviours/ actions may become more intuitive or automatic, however when referring to a handful or a relatively limited number of victims, it would be expected that even the most "expert" predators would still be attuned to the cues they may actively seek when looking for someone to exploit, so in the case of offenders or in populations where extortion is more likely to occur, practice may make perfect. Indeed, results from the present study suggest that in student samples or samples where observers may not have much experience identifying vulnerability or extorting others, it's possible that the dark traits have a sense or "intuition" regarding another's level of vulnerability, but due to

their lack of experience, have an inability to distinctly identify certain vulnerable cues, instead attributing their decisions to physical attributes such as dress or appearance.

At least to some extent, all of the dark traits were associated with a reduction in mentioning facial expressions and emotional appearance of women across all vulnerability types. Given the highly correlated nature between the dark traits, this is not altogether surprising; what is surprising, however, was that facet 4 (antisocial) and not facet 1 (affective) psychopathy was associated with this reduction. This being said, while some researchers have found that both Factor 1 and Factor 2 psychopathy are associated with emotional recognition deficits (e.g., Hastings et al., 2008; Prado et al., 2015), others have identified that psychopathy and callous/unemotional traits are associated with increased accuracy in assessing fearful faces (e.g., Book et al., 2007; Woodworth & Waschbusch, 2007). Further, in a meta-analytic study assessing the relationships between emotional recognition and antisocial behaviours, Marsh and Blair (2008) found that antisocial conduct (e.g., aggression, abuse, criminal behaviours) was related to deficits in recognizing fear and sadness. Therefore, given that Factor 2 psychopathy, and in particular, antisocial behaviours (i.e., facet 4 [antisocial] psychopathy) have demonstrated to be most consistently related to emotional recognition deficits, a potential explanation for the current findings may be that despite low assertive women appearing more anxious in their videos than high assertive women, it's possible that given the nature of the videos (i.e., dating biography), all women appeared somewhat nervous and/or anxious, which may have translated to appearing mildly fearful and as such, those high on facet 4 psychopathy were less likely to be able to identify this and subsequently, were less likely to indicate utilizing facial expressions or the emotional appearance of daters.

Interestingly, the planfulness dimension of Machiavellianism was positively associated with the perception of using posture in all assessments of vulnerability (i.e., regardless of dater assertiveness), and the emotional appearance and upper body movements of high assertive women. As a whole, despite Machiavellians being callous and manipulative, in the short term or in certain contexts (e.g., in positions of power), they do not appear to be viewed negatively by others (Deluga, 2001; Hawley, 2003). It would make sense that in being driven by agentic, material and self-beneficial goals, those with Machiavellian traits are successfully able to interpret body language and emotion in others and respond/behave accordingly to increase their interpersonal and manipulative success. Given that results indicated that antagonism and agency were negatively related to mentioning posture and emotional appearance, it is possible that planfulness, which is comprised of deliberation and order, and is positively related to achievement and self-discipline (Collison et al., 2018), may be the mechanism behind the Machiavellians 'likeableness'. As such, it stands to reason that this particular dimension may be more attuned to identifying potential postural (e.g., defensive, offensive) or emotional expressions (e.g., fear, sadness, anger) that may be in misalignment with successfully manipulating others and obtaining their goals.

Conscientiousness was also related to perceptions of using emotional appearance in high assertive women. This is in partial alignment with Study 1 indicating that high assertive women are more likely to appear animated, including having more communicative facial expressions. Stemming from their achievement seeking nature, conscientious individuals may be attuned to others' emotional states in order to reach their goals (e.g., noticing emotional changes of the hiring manager during an interview

and being able to respond/adapt responses accordingly). Ergo, if high assertive women are more likely to have expressive faces, a conscientious person may be able to further interpret these facial expressions as emotional expressions. Moreover, emotionality, which includes feeling emotional attachments and empathy towards others (Ashton et al., 2014), was related to mentioning facial expressions in all women when appraising vulnerability. This is in alignment with past research indicating that in general, high levels of empathy and emotional intelligence are related to being able to accurately identify emotion in others (e.g., Balconi & Canavesio, 2016; Hofelich & Preston, 2012; Porter et al., 2011).

The honesty-humility dimension of the HEXACO-60 was related to citing postural, facial, and emotional cues when determining vulnerability in both low and high assertive women, which is, for the most part, in direct juxtaposition to the Dark Tetrad traits. Extant literature examining the “core” of the Dark Tetrad has indicated that in addition to low levels of emotionality, agreeableness and conscientiousness, low levels of honesty-humility seem to be the most salient predictor of all four dark traits (e.g., Book et al., 2015, 2016; Lee & Ashton, 2005; Paulhus & Williams, 2002). Alternatively, according to Woodmass and O’Connor (2018), the opposite of psychopathy appears to be one who is high on honesty-humility, agreeableness, and conscientiousness, among other personal traits (e.g., being considerate and cooperative, showing restraint). This said, it is not surprising that the pattern of results emerging between nonverbal behaviours and honesty-humility is in contrast to those utilized (or not) by the dark traits. This may also explain why honesty-humility was unrelated to the perceptions of using physical attractiveness or dress when appraisal vulnerability; that is, if one high on honesty-

humility is able to identify and interpret nonverbal cues (e.g., posture, emotional appearance, facial expression), then they may not need to rely so heavily on intuition, dress or physical appearance.

Finally, for low assertive women, higher ratings of sexual vulnerability were associated with mentioning physical appearance. This is in correspondence with past research indicating that for sexual offenders, physical appearance and ease of attack are important factors when selecting victims (e.g., Beauregard et al., 2007; Stevens, 1994). The lack of findings regarding how nonverbal cues are utilized across victimization type may be attributable to the methodology in which the study employed. Notably, observers were not asked how they came to their decisions for sexual and violent vulnerability separately, but rather, were asked what information they used to make their decisions overall. In this circumstance, it is difficult to tease apart any potential differences between nonverbal cues employed across victimization type, but it is plausible that because sexual vulnerability was presented before violent vulnerability, in conjunction with sexual vulnerability being considered a gendered crime, a priming effect of violent vulnerability in both ratings and identifying nonverbal cues, occurred. That is, sexual vulnerability may have been the most salient outcome, so when pinpointing the cues during vulnerability appraisal, observers may have been more likely to recall the nonverbal cues they considered to be indicative of sexual vulnerability. Further, given the opposing pattern of results demonstrated between observer traits and nonverbal cues used (i.e., Dark Tetrad versus honesty-humility), observer personality may have canceled out any potential associations between nonverbal cues and vulnerability as a whole.

Limitations

Though the current study has several strengths including being sensitive to perceived differences between assertive and unassertive women, incorporating nonsexual violent vulnerability, and utilizing perceived vulnerability in place of victimization history, this study does have limitations that need to be addressed. First, as the traditional alpha value of .05 was utilized to combat the potential for increased Type-II error, inherently the chances of getting a Type-I error increased. Indeed, with some confidence intervals containing zero (e.g., the negative relationship between the direct-verbal subscale of the CAST and sexual vulnerability in high RAS daters), it is realistic and probable that some results were spurious. Therefore, results should be interpreted with caution and readers are urged to rely on effect sizes rather than focusing on significance values. Accordingly, as effect sizes were small, it is important to reiterate the exploratory nature of the present study and the necessity of replication studies.

Second, both observers and daters were undergraduate students from a Southern Ontario university with the majority reporting being of Caucasian descent. It is very possible that different patterns of results may emerge in different regions, non-WEIRD (westernized, educated, industrialized rich, democratic) populations, LGBTQT communities, clinically vulnerable peoples where vulnerability cues may be more pronounced, or in corporate/ criminal settings where the dark traits may be more prominent. Along a similar vein and as mentioned in Study 1, as daters were all self-reported women, findings related to vulnerability are not necessarily generalizable to other genders.

Third, despite past research indicating that vulnerability and past victimization, including bullying and (non)sexual violence are related to higher levels of neuroticism (e.g., Chung & Charles, 2016; Ellrich & Baier, 2016; Glasø et al., 2007; Sakaguchi & Hasegawa, 2006), with neuroticism demonstrating an overall negative correlation with assertiveness (Vestewig & Moss, 1976), neuroticism was not included into the present study as an item assessing perceived personality characteristics of daters due to its potential definitional complexity. That is, given that neuroticism may not be a readily understandable or interpretable term for first-year undergraduate students in conjunction with the length and number of questionnaires observers had to complete, perceived levels of neuroticism in daters were not included in hopes of preserving data quality. In doing this however, inferences regarding the relationship between appearing neurotic and vulnerability cannot be made and accordingly, potential important implications (e.g., addressing negative affect such as dejection, fear and anger), are left unaddressed. Notably, anxiety, which is often included as a component of neuroticism (John & Srivastava, 1999), was included as a perceived personality/ emotionality trait and as such, negative affect, at least to some extent, was addressed in the present study.

Finally, while the use of vulnerability ratings over victimization history has its advantages including being able to provide useful information about selection techniques regardless if one has been previously victimized or not, it is not without its own confounds. Specifically, it is possible that certain effects (e.g., accuracy of identifying vulnerability) went undetected due to differences in self-other ratings of vulnerability; even if someone had experienced victimization in the past, they may not view themselves as vulnerable to future victimization and as such, results may be biased towards self-

perceptions. This type of bias has been demonstrated in studies where global measures (e.g., are you vulnerable to sexual victimization) are utilized rather than specific measures (e.g., have you ever experienced unwanted sexual advances; have you experienced unwanted sexual touching). For example, in a study looking at characteristics of self-identified bullied children, Theriot et al. (2005) found that despite meeting the criteria for bullying according to a specific measure (e.g., have you been hit in the past three months?), when asked if they experienced bullying within the past three months (i.e., global measure), 50% of children indicated they were not bullied. Therefore, instead of measuring the accuracy in which observers are able to detect vulnerability in others, the present study is of closer alignment to detecting if observers are able to identify if someone thinks they are vulnerable. Without a question, this is able to provide us with key insight into the victim/offender relationship, however it is unfortunately unable to provide a clear picture to the extent in which dark personality types are able to detect vulnerability in others.

With further regards to specificity issues, it is plausible that results for nonverbal behaviours were blunted or not detectable due to the categories of nonverbal behaviours being too broad. Specifically, in community/university samples where participants are historically unable to identify the rationale behind their selection techniques (e.g., Ritchie, 2016; Wheeler et al., 2009), results may have been different if more specific examples of nonverbal behaviours were provided. For example, instead of ‘how [the dater’s] upper body moved’ it may have been more appropriate to break down the broad categories into more specific, observable, and identifiable behaviours like “they crossed their arms”, “they moved their hands” or “they fidgeted”. Notably, as Study 2 was one of

the first of its kind to utilize nonverbal behaviours other than gait in the appraisal of vulnerability, broad categories of movements were selected over specific behaviours to capture all potential types of behaviours. Certainly, there are benefits to doing this (e.g., being able to draw general conclusions), but in samples where there is already difficulty in identification, such broad categories may have been detrimental rather than beneficial.

Implications and Future Directions

The current research suggests that women lacking in assertiveness appear to be at an increased risk of appearing vulnerable to both sexual and nonsexual violence in comparison to high assertive women. Without a doubt, enhancing assertiveness in women may serve to increase their self-esteem, confidence, and self-efficacy, whilst also helping them appear more assertive, confident, dominant, extraverted, open, and less anxious, which in turn may aid in the prevention of victimization. More specifically, this research demonstrates that there are perceived personality differences between low and high assertive women and as such, designing targeted programs addressing certain traits like anxiousness may be most applicable to low assertive women. This is not to say that assertive women would not benefit from receiving support and coping strategies regarding anxiety, but rather, that addressing anxiety in non-assertive women may simultaneously help to prevent potentially harmful interpersonal interactions.

The positive effects of enhancing assertiveness extends beyond women and those who may be vulnerable to future or repeated victimization; targeting and building assertiveness in those at risk to victimize others may also assist in the prevention of victimization. Indeed, in Grady and Brodersen's (2008) study, sexual offenders identified that their unassertive communication skills played a role in their offending history, while

also indicating that learning how to respond and behave assertively may be an integral step in their recovery and reintegration, which in turn, would enhance their ability to act appropriately in future interpersonal contexts. Moreover, the present study suggests that everyone may benefit from workshops designed to build confidence and increase self-esteem, not just because it may help combat the appearance of vulnerability, but rather because it is an important mechanism in developing healthy relationships with others and the self.

One interesting avenue of future inquiry may be to incorporate behavioural tasks into vulnerability research. For example, future researchers may find it beneficial to present observers with two video clips depicting vulnerable and nonvulnerable profiles and then have them select which of the two they would victimize and why. Further, it could be beneficial for future research to examine the differences between those who have been victimized and see themselves as vulnerable and those who do not. With research to suggest that women who have been sexually assaulted have delayed response latency, that is, they take longer to decipher when a situation has become unsafe (e.g., Marx et al., 2001; Soler-Baillo et al., 2005; Wilson et al., 1999), distinguishing the differences between those who see themselves as vulnerable and those who do not may be invaluable in generating targeted intervention and prevention programs. For example, it may be that women who have experienced sexual victimization but do not view themselves as sexually vulnerable exhibit response latency and in these circumstances, it would be highly beneficial to teach them the skills necessary to assess and identify when a situation may be risky or dangerous. Further, if personality and/or behavioural

differences exist between vulnerable versus invulnerable feeling women, intervention programs could be tailored to specifically address these distinctions.

As the present study utilized a zero-acquaintance, nonverbal framework, it would also be interesting for future research to include both verbal and nonverbal cues as well as varying degrees of acquaintanceship. While it is likely that observers would be most accurate in identifying vulnerability when using both verbal and nonverbal cues, determining which type of cues are most salient in the detection of vulnerability and by whom could have important implications for understanding vulnerability and preventing future victimization. For example, if observers are more accurate in assessments of vulnerability when listening to audio clips than when viewing videos without audio, this could suggest that vulnerability is mostly manifested in verbal behaviours and accordingly, may be where preventative programming should place emphasis. Alternatively, if nonverbal cues are utilized more readily in assessments of vulnerability, then perhaps targeting specific behaviours rather than personality (e.g., assertiveness) would be more appropriate.

Further, despite acknowledging the fact, and being more likely to be sexually victimized by (previous) intimate partners or someone they are familiar with (Kilpatrick et al., 1992; Ullman et al., 1999), women tend to be more fearful of strangers rather than acquaintances (Davis, 2000; Hickman & Muehlendhard, 1997). It would be interesting to see how varying degrees of acquaintanceship influence both nonverbal behaviours and perceptions of vulnerability. This line of inquiry in particular could provide further information on how dark personalities utilize social and contextual cues when assessing vulnerability in others as well as insight into how they approach and respond to

interpersonal relationships and overall, may provide a richer understanding of what makes them such skilled social predators.

Conclusion

While study 2 does not suggest that individuals with dark traits are more adept at identifying vulnerability in others, nor are they more likely to view everyone as vulnerable, this study does provide evidence that sexual, and to a lesser extent, violent vulnerability should not be seen as homogenous across all women. That is, key differences in vulnerability, perceived personality, and nonverbal vulnerability cues emerged between low and high assertive women, where low assertive women were perceived as being both more vulnerable and as having more vulnerable personality traits. Study 2 also demonstrates preliminary evidence for the role that nonverbal behaviours play in appearing vulnerable, as well as how the dark traits may utilize these cues during their assessments of vulnerability. While future research is needed to replicate and further advance this line of inquiry, findings from the present study provide necessary information needed to develop appropriate, tailored and effective intervention strategies for preventing victimization.

General Conclusion

In quick summation, with evidence to suggest that personality is a salient factor in the prediction of past victimization (e.g., Beauregard et al., 2007; Classen et al., 2001; Goetz et al., 2012; Selkin 1978; Stevens, 1994), as well as gait demonstrating associations with both victimization and vulnerability (e.g., Book et al., 2013; Grayson & Stein, 1981; Wheeler et al., 2009), Study 1 simultaneously sought to explore how assertive and submissive personality traits as well as how nonverbal behaviours other

than gait (e.g., emotional expressions, posture) impact self-perceptions of vulnerability to sexual and violent victimization. Overall, results indicated that low assertive women were more likely than high assertive women to perceive themselves as vulnerable to sexual violence and engage in certain behaviours including full leg movements and engaging in self-touch.

Study 2 explored how observer personality constructs/traits (e.g., psychopathy, sadism, Machiavellianism, honesty-humility) influence both the detection and assessment of vulnerability within others. Although low assertive women were perceived as more vulnerable to sexual and violent victimization than high assertive women, the Dark Tetrad traits were not more accurate in their assessments of vulnerability, nor were they more likely to view all women as vulnerable. Results also demonstrated that the perceived nonverbal behaviours utilized during vulnerability appraisal does, in part, depend on observer personality characteristic. That is, those with dark traits were more likely to indicate using intuition or the daters' dress and physical appearance while those high on honesty-humility were more likely to cite posture, emotional appearance and facial expressions when appraising vulnerability. Notably, it is very possible that a different pattern of results may emerge in offender samples where exploiting others is more commonplace and as such, further research, especially within these populations, is needed.

Despite results not corroborating previous research that individuals high on the dark traits (in particular, psychopathy), are accurate in assessing vulnerability in others (e.g., Book et al., 2004; Denardo et al., 2018; Wheeler et al., 2009), the fact remains that they are expert social predators. This may be further highlighted by the finding that the

dark traits were not more likely to view everyone as vulnerable, suggesting that they may be particular in who they would select for victimization and/or exploitation. While study methodology may have inhibited the ability to determine if an observer was 'accurate' in assessing vulnerability (e.g., self-other agreement), Sakaguchi and Hasegawa (2006) demonstrated that when using videos incorporating full-body displays, self-other agreement is in higher accordance then when using point-light displays alone, underscoring the important role that nonverbal behaviours play in interpersonal contexts.

Taken together, both Study 1 and 2 aim to provide further information on those at risk for sexual and/or violent victimization, as well as victim selection methods. Notably, this research suggests that low assertive women may be at a higher risk for sexual and violent victimization and may also display distinct behavioural cues that may be indicative of their vulnerability. Certainly, addressing and incorporating assertiveness building techniques into daily life may reduce the likelihood for one to be victimized, but most importantly, it would encourage the development of healthy self-esteem, confidence, self-efficacy, and feelings of autonomy or internal control. This being said, it is important to reiterate that this research is not designed to place blame on victims; the sole responsibility of victimization falls upon the perpetrator and the perpetrator alone.

Indeed, as past research suggests that offenders may benefit from engaging in assertiveness training (e.g., Grady & Brodersen, 2008), with even the most high-risk, high-need offenders (e.g., psychopathic offenders; Simourd & Hoge, 2000) benefiting from appropriate treatment targeting relevant responsivity factors (e.g., antisocial attitudes/ cognitions, treatment noncompliance; Olver & Wong, 2009), the present research it is an important steppingstone in identifying the methods in which successful

social predators, like those with the dark traits, employ and utilize when manipulating and exploiting others. Without a question, in determining the nonverbal cues and personality traits associated with vulnerability and victimization, we can further develop, advance, and implement appropriate and effective prevention and/or intervention strategies for both those at risk to victimize and be victimized by others.

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Appendix A

Rathus Assertiveness Schedule

Directions: Indicate how well each item describes you by using this code:

-3	-2	-1	1	2	3
Very much unlike me	Rather unlike me	Slightly unlike me	Slightly like me	Rather like me	Very much like me

1. Most people seem to be more aggressive and assertive than I am.
-3 -2 -1 1 2 3
2. I have hesitated to make or accept dates because of "shyness."
-3 -2 -1 1 2 3
3. When the food served at a restaurant is not done to my satisfaction, I complain about it to the waiter or waitress.
-3 -2 -1 1 2 3
4. I am careful to avoid hurting other people's feelings, even when I feel that I have been injured.
-3 -2 -1 1 2 3
5. If a salesperson has gone to considerable trouble to show me merchandise that is not quite suitable, I have a difficult time saying "No."
-3 -2 -1 1 2 3
6. When I am asked to do something, I insist upon knowing why.
-3 -2 -1 1 2 3
7. There are times when I look for a good, vigorous argument.
-3 -2 -1 1 2 3
8. I strive to get ahead as well as most people in my position.
-3 -2 -1 1 2 3
9. To be honest, people often take advantage of me.
-3 -2 -1 1 2 3
10. I enjoy starting conversations with new acquaintances and strangers.
-3 -2 -1 1 2 3
11. I often don't know what to say to people I find attractive.
-3 -2 -1 1 2 3
12. I will hesitate to make phone calls to business establishments and institutions.
-3 -2 -1 1 2 3
13. I would rather apply for a job or for admission to a college by writing letters than by going through with personal interviews.
-3 -2 -1 1 2 3
14. I find it embarrassing to return merchandise.
-3 -2 -1 1 2 3
15. If a close and respected relative were annoying me, I would smother my feelings rather

than express my annoyance.

-3 -2 -1 1 2 3

16. I have avoided asking questions for fear of sounding stupid.

-3 -2 -1 1 2 3

17. During an argument, I am sometimes afraid that I will get so upset that I will shake all over.

-3 -2 -1 1 2 3

18. If a famed and respected lecturer makes a comment which I think is incorrect, I will have the audience hear my point of view as well.

-3 -2 -1 1 2 3

19. I avoid arguing over prices with clerks and salespeople.

-3 -2 -1 1 2 3

20. When I have done something important or worthwhile, I manage to let others know about it.

-3 -2 -1 1 2 3

21. I am open and frank about my feelings.

-3 -2 -1 1 2 3

22. If someone has been spreading false and bad stories about me, I see him or her as soon as possible and "have a talk" about it.

-3 -2 -1 1 2 3

23. I often have a hard time saying "No."

-3 -2 -1 1 2 3

24. I tend to bottle up my emotions rather than make a scene.

-3 -2 -1 1 2 3

25. I complain about poor service in a restaurant and elsewhere.

-3 -2 -1 1 2 3

26. When I am given a compliment, I sometimes just don't know what to say.

-3 -2 -1 1 2 3

27. If a couple near me in a theater or at a lecture were conversing rather loudly, I would ask them to be quiet or to take their conversation elsewhere.

-3 -2 -1 1 2 3

28. Anyone attempting to push ahead of me in a line is in for a good battle.

-3 -2 -1 1 2 3

29. I am quick to express an opinion.

-3 -2 -1 1 2 3

30. There are times when I just can't say anything.

-3 -2 -1 1 2 3

Appendix B

HEXACO-60

Instructions: Please read each statement and decide how much you agree or disagree with that statement. Then write your response in the space next to the statement using the following scale. You may skip any questions you do not wish to answer.

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

1. I would be quite bored by a visit to an art gallery.
2. I plan ahead and organize things, to avoid scrambling at the last minute.
3. I rarely hold a grudge, even against people who have badly wronged me.
4. I feel reasonably satisfied with myself overall.
5. I would feel afraid if I had to travel in bad weather conditions.
6. I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
7. I'm interested in learning about the history and politics of other countries.
8. I often push myself very hard when trying to achieve a goal.
9. People sometimes tell me that I am too critical of others.
10. I rarely express my opinions in group meetings.
11. I sometimes can't help worrying about little things
12. If I knew that I could never get caught, I would be willing to steal a million dollars.
13. I would enjoy creating a work of art, such as a novel, a song, or a painting.
14. When working on something, I don't pay much attention to small details.
15. People sometimes tell me that I'm too stubborn.
16. I prefer jobs that involve active social interaction to those that involve working alone.

17. When I suffer from a painful experience, I need someone to make me feel comfortable.
18. Having a lot of money is not especially important to me.
19. I think that paying attention to radical ideas is a waste of time.
20. I make decisions based on the feeling of the moment rather than on careful thought.
21. People think of me as someone who has a quick temper.
22. On most days, I feel cheerful and optimistic.
23. I feel like crying when I see other people crying.
24. I think that I am entitled to more respect than the average person is.
25. If I had the opportunity, I would like to attend a classical music concert.
26. When working, I sometimes have difficulties due to being disorganized.
27. My attitude toward people who have treated me badly is "forgive and forget."
28. I feel that I am an unpopular person.
29. When it comes to physical danger, I am very fearful.
30. If I want something from someone, I will laugh at that person's worst jokes.
31. I've never really enjoyed looking through an encyclopedia.
32. I do only the minimum amount of work needed to get by.
33. I tend to be lenient in judging other people.
34. In social situations, I'm usually the one who makes the first move.
35. I worry a lot less than most people do.
36. I would never accept a bribe, even if it were very large.
37. People have often told me that I have a good imagination.
38. I always try to be accurate in my work, even at the expense of time.

39. I am usually quite flexible in my opinions when people disagree with me.
40. The first thing that I always do in a new place is to make friends.
41. I can handle difficult situations without needing emotional support from anyone else.
42. I would get a lot of pleasure from owning expensive luxury goods.
43. I like people who have unconventional views.
44. I make a lot of mistakes because I don't think before I act.
45. Most people tend to get angry more quickly than I do.
46. Most people are more upbeat and dynamic than I generally am.
47. I feel strong emotions when someone close to me is going away for a long time.
48. I want people to know that I am an important person of high status.
49. I don't think of myself as the artistic or creative type.
50. People often call me a perfectionist.
51. Even when people make a lot of mistakes, I rarely say anything negative.
52. I sometimes feel that I am a worthless person.
53. Even in an emergency I wouldn't feel like panicking.
54. I wouldn't pretend to like someone just to get that person to do favors for me.
55. I find it boring to discuss philosophy.
56. I prefer to do whatever comes to mind, rather than stick to plan.
57. When people tell me that I'm wrong, my first reaction is to argue with them.
58. When I'm in a group of people, I'm often the one who speaks on behalf of the group.
59. I remain unemotional even in situations where most people get very sentimental.
60. I'd be tempted to use counterfeit money, if I were sure I could get away with it.

Appendix C

The Revised Interpersonal Adjectives Scale – Big Five, “Assured-Dominance”,
“Unassured-Submissive” and “Warm-Agreeable” Subscales and Items

Please note that participants will rate how accurately each word describes them as a person using an 8-point likert scale ranging from 1 (“*extremely inaccurate*”) to 8 (“*extremely accurate*”).

Subscale	Item
Assured-Dominance	2. Assertive
	9. Dominant
	43. Forceful
	62. Self-assured
	65. Domineering
	75. Firm
	87. Self-confident
	113. Persistent
Unassured-Submissive	3. Timid
	1. Unaggressive
	52. Unbold
	55. Shy
	57. Meek
	88. Unauthoritative
	97. Forceless
	124. Bashful
Warm-Agreeable	7. Soft-hearted
	9. Kind
	25. Tender
	68. Tenderhearted
	79. Accommodating
	91. Charitable
	101. Gentlehearted
	108. Sympathetic

Appendix D

Vulnerability Questionnaire

1. On a scale from 0% to 100%, how vulnerable do you feel that you are to future sexual or attempted sexual victimization (e.g., sexual abuse, sexual assault)?

2. On a scale from 0% to 100%, how vulnerable do you feel that you are to future nonsexual or attempted nonsexual violent victimization (e.g., assault, physical abuse, armed robbery, threats)?

Appendix E

Nonverbal Behaviour Coding Guide

On a scale from 0 to 2, rate the person in each of the videos on the following items.

1. The persons gaze was straight ahead

0	1	2
(not at all)	(Occasionally)	(A lot)
2. The person looked downwards

0	1	2
(not at all)	(Occasionally)	(A lot)
3. The person looked sideways

0	1	2
(not at all)	(Occasionally)	(A lot)
4. The person looked upwards

0	1	2
(not at all)	(Occasionally)	(A lot)
5. The person frowned

0	1	2
(not at all)	(Occasionally)	(A lot)
6. The person smiled

0	1	2
(not at all)	(Occasionally)	(A lot)
7. The person laughed

0	1	2
(not at all)	(Occasionally)	(A lot)
8. The person was animated (e.g., facial expressiveness, gestures- irrespective of emotion)

0	1	2
(not at all)	(Occasionally)	(A lot)
9. The person appeared engaged in the conversation

0	1	2
(not at all)	(Occasionally)	(A lot)
10. The person moved their head (e.g., head nods/head tilts)

0	1	2
(not at all)	(Occasionally)	(A lot)

11. The person used/moved their hands			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
12. The person used/moved their feet			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
13. The person used/moved their entire arm			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
14. The person used/moved their entire leg			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
15. The person crossed their legs (e.g., at their knees)			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
16. The person crossed their feet (e.g., at their ankles)			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
17. The person sat with one leg tucked under their bottom			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
18. The person sat crossed legged on the chair			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
19. The person wrapped/crossed their arms			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
20. The person wrapped/crossed their hands			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
21. The persons body posture was open (e.g., arms/legs not crossed/wrapped)			
0	1	2	
(not at all)	(Occasionally)	(A lot)	
22. The person had a relaxed posture (e.g., relaxed sitting posture, non-erect posture)			

0	1	2
(not at all)	(Occasionally)	(A lot)

23. The person sat with tense posture (e.g., erect posture, stiff body)

0	1	2
(not at all)	(Occasionally)	(A lot)

24. The person engaged in self-touch (e.g., touching nose, lip, hair, hand, face, head)

0	1	2
(not at all)	(Occasionally)	(A lot)

25. This person fidgeted (e.g., foot/hand tapping)

0	1	2
(not at all)	(Occasionally)	(A lot)

26. Other, please specify:

0	1	2
(not at all)	(Occasionally)	(A lot)

27. Other, please specify:

0	1	2
(not at all)	(Occasionally)	(A lot)

Appendix F

Emotional State Check Questionnaire

On a scale from 1 (extremely inaccurate) to 5 (extremely accurate), please indicate the extent to which each adjective describes how you were feeling while you were recording your dating profile.

A. Self-assured: _____

B. Timid: _____

C. Confident: _____

D. Shy: _____

Appendix G

Dater Video Script

Although it is not necessary to use the topics/prompts presented within this script in your dating profile, you are encouraged to think about your responses to each topic/prompt to prevent any stalls and/or lags during filming. As the purpose of this script is to make your dating video appear as natural as possible, the order and detail in which you discuss any of the topics presented in this script is completely at your discretion.

We ask that you think carefully and thoughtfully about your responses. Try to respond/act as you would if you were trying to 'put your best foot forward' when meeting someone for this first time, or as if were to use this video to find a potential partner (e.g., on a dating website) or get on a dating show (e.g., the Bachelor).

Introduction:

Name:

Age:

Occupation:

Topics:

If I could describe myself in four words, they would be:

Hobbies/favorite activities:

My talents are:

My favorite food(s)/ restaurants are:

On the weekends, I like to/ my ideal weekend plans are:

The aspects/qualities of myself I like/ am most proud of are:

The qualities I look for in others are:

If I could go anywhere in the world, I would go (and why?):

My ideal date is:

Appendix H

Study 1: Recruitment Notice

Study Name: Body Language, Personality, and Perceptions of Vulnerability.

Description: This study will ask you to complete a demographic questionnaire, a series of questionnaires that will inquire about your personality traits, and self-perceptions of vulnerability to future victimization (i.e., sexual, violent). You will also be video-taped creating an online dating profile where you will be asked to describe yourself (e.g., hobbies/interests).

Benefits of Participating: All participants will receive either 1.00% course credit or \$20 payment.

Duration and Locale: This study will be conducted in a psychology lab space within the Loeb Building at Carleton University and will take about 1 hour to complete.

Research Personnel:

MA Researcher
Jayme Stewart
jayme.stewart@carleton.ca

Academic Supervisor
Adelle Forth
adelle.forth@carleton.ca

This study has received clearance by the Carleton University Research Ethics Board B (Clearance # 111586).

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

Appendix I

Study 1: Informed Consent Form

Name and Contact Information of Researchers:

Jayme Stewart, Carleton University, MA Student, Department of Psychology
Email: jayme.stewart@carleton.ca

Supervisor and Contact Information:

Dr. Adelle Forth, Carleton University, Associate Professor, Department of Psychology
Phone: 631-520-2600, etc. 1267
Email: adelle.forth@carleton.ca

Project Title

Body Language, Personality, and Perceptions of Vulnerability.

Carleton University Project Clearance

Clearance # 111586

Date of Clearance: November 11, 2019

Invitation

You are invited to take part in the research project because you previously participated in a psychology mass testing study and completed a questionnaire assessing assertiveness. At that time, you indicated an interest in possibly participating in future research. The information in this form is intended to help you understand what we are asking of you so that you can decide whether you agree to participate in this study. Your participation in this study is voluntary, and a decision not to participate will not be used against you in any way. As you read this form, and decide whether to participate, please ask all the questions you might have, take whatever time you need, and consult with others as you wish.

What is the purpose of the study?

The purpose is to explore potential relationships between personality traits (including submissiveness), nonverbal behaviours (e.g., facial expressions, posture), and perceptions of vulnerability to future victimization (i.e., sexual, violent). First, you will be asked to video-record a dating profile approximately one to two-minutes in length by discussing your interests and/or hobbies. For the purpose of the present study, your videos will be reviewed and rated on attractiveness, style and body language by one man and three women. With your consent, this video will be used in future research (e.g., may be shown to student or offender populations) or for educational purposes. Second, you will be asked to complete a series of self-report questionnaires that measure your personality traits, a demographics questionnaire, and a questionnaire assessing self-perceptions of vulnerability to future sexual and violent victimization. In total, this study will take approximately one hour to complete.

What will I be asked to do?

If you agree to take part in the study, we will ask you to: complete a demographic questionnaire (i.e., age, ethnicity), answer a series of 5 self-report questionnaires, and will create a video-recorded online dating profile, where you will be asked to talk about yourself (e.g., interests/hobbies). This study will take approximately 1 hour to complete.

Please note that if you agree to participate within the current study, the video-recording is a mandatory part of participation, however you may withdraw from the study at any point.

Risks and Inconveniences

You will be asked how vulnerable you feel you are to future victimization (e.g., sexual, violent). You will also be filmed at some point during the study. Should you feel discomfort at any point during the study, please be reminded that your participation is entirely voluntary, that you may choose not to answer any question, and that you may withdraw from the study at any time without penalty. At the end of the study, there will be a secondary consent from which will ask you to provide consent for your video to be used in future research or for educational purposes. You can still participate within the current study if you do not wish to have your video used in the future.

Possible Benefits

You may not receive any direct benefit from your participation in this study. However, your participation may allow researchers to better understand vulnerability cues that may be inadvertently transmitted through body language. If we can distinguish a clear relationship between vulnerability cues and body language, we may be able to better protect against experiences of future victimization in some cases. Certainly, this research is expected to provide valuable insight into the relationship between vulnerability cues and body language, which has potential for yielding therapeutic benefits and preventative measures.

Compensation/Incentives

You will receive a **1.00% grade increase** toward your introductory psychology or second-year psychology course final grade **or \$20 payment** for completing this study.

No waiver of your rights

By signing this form, you are not waiving any rights or releasing the researchers from any liability.

Withdrawing from the study

If you withdraw your consent during the course of the study, all information collected from you before your withdrawal will be discarded. You will still receive 1.00% course credit or \$20 payment should you choose to withdraw.

After the study, you may request that your data be removed from the study and deleted by notice given to the Principal Investigator (named above) within **48 hours** after your completion.

Confidentiality

We will treat your personal information as confidential, although absolute privacy cannot be guaranteed. No information that discloses your identity will be released or published without your specific consent. Research records may be accessed by the Carleton University Research Ethics Board in order to ensure continuing ethics compliance.

The results of this study may be published or presented at an academic conference or meeting, but the data will be presented so that it will not be possible to identify any participants unless you give your express consent. You will be assigned a code so that your identity will not be directly associated with the data you have provided. All data, including coded information, will be kept in a password-protected file on a secure computer.

Because you will be granted course credit or payment for taking part in the study, identifying information will be retained using a code until the course credit or payment is granted.

Data Retention

After the study is completed, your de-identified data will be retained for future research use. There is minimal risk with sharing your data with the research team and allowing your videotape to be used for future research. Notably, the chances of being recognized in the video are very small, though it is possible. Keep this in mind as you decide whether to allow use of your videotape for the following purposes. There will be no indication of your name or any identifiable information on the videotape. You may consent to have the videotape used only for research purposes or you may choose not to consent to the release of your data.

New information during the study

In the event that any changes could affect your decision to continue participating in this study, you will be promptly informed.

Ethics review

This project was reviewed and cleared by the Carleton University Research Ethics Board B. If you have any ethical concerns with the study, please contact Carleton University Research Ethics Board (by phone at 613-520-2600 ext. 4085 or by email at ethics@carleton.ca).

Consent. I have read the above form and hereby consent to continue participating in this study and be video-recorded. The data in this study will be used for research publications and/or teaching purposes. I am aware that the data collected in this study will be kept strictly confidential and anonymous. By clicking on the box, I consent to participate in this study.

By selecting yes below I indicate that I have read the above informed consent and that I am fully aware of any possible risks or consequences of participating in this study.

___ Yes, I consent to participate in the current study and be video-recorded.

___ No, I do not consent to participate in the current study.

Appendix J

Study 1: Secondary Consent Form

Name and Contact Information of Researchers:

Jayme Stewart, Carleton University, MA Student, Department of Psychology
Email: jayme.stewart@carleton.ca

Supervisor and Contact Information:

Dr. Adelle Forth, Carleton University, Associate Professor, Department of Psychology
Phone: 631-520-2600, etc. 1267
Email: adelle.forth@carleton.ca

Project Title

Body Language, Personality, and Perceptions of Vulnerability.

Carleton University Project Clearance

Clearance # 111586

Date of Clearance: November 11, 2019

Informed Consent to the Use of Data

The purpose of this informed consent is to ensure that you now understand the true purpose of the study and that you agree to allow your data to be used for research and teaching purposes. Because you were only told of the procedures and not the purpose of this study at the outset, we are now asking for your consent to allow your data to be used for research and teaching purposes. Please note that for the purpose of the present study, future studies, or for educational purposes, your video will **not** include audio, therefore any personal details you may have disclosed within your dating profile will not be shared.

Purpose: We told you that the current study was designed to measure how personality traits impact the self-perception of vulnerability to future victimization. In this study, you were videotaped before getting to see the criteria in which participants in future research would rate your video on and did not know your videos would be scrubbed of all sound, which is a form of **deception through omission**. We could not initially disclose this to you as we needed to ensure your natural body language was captured on camera. We were specifically interested in capturing your natural body language as research has suggested individuals who have previously experienced victimization or perceive themselves as vulnerable display distinct body language (e.g., averted gaze, facial expressions, arm-crossing behaviours) compared to those who have not previously experienced victimization or do not see themselves as vulnerable.

It is important to note that this research is correlational and should not be interpreted to mean that victims are to blame for their victimization as a result of their body language or personality. There is no question that fault for victimization lies solely with the perpetrator.

The videotapes we collected will be coded to:

- (1) Determine if certain body language cues (e.g., posture, facial expressions) are more common among participants who have self-reported as being vulnerable to future victimization. Note, that this has been found in previous studies considering nonverbal cues (e.g., gait, head movements), however the correlations were small. Thus, we expect that participants who have self-reported as being vulnerable to future victimization will have different body language cues compared to participants who do not report as being vulnerable to victimization.
- (2) If our hypothesis is confirmed, the videos will be shown to participants in future studies to:
 - Determine if people in the general population with certain personality traits (e.g., psychopathic, agreeable) are better at identifying individuals who they think would have a higher likelihood of being victimized in the future based on their nonverbal behaviour.
 - Determine if inmates with certain personality traits (e.g., psychopathic, agreeable) or offence histories (e.g., violent offenders) are better at identifying individuals who they think would have a higher likelihood of being victimized in the future based on their nonverbal behaviour.
- (3) As stated in the original informed consent we are also interested in identifying whether other characteristics play a role in the perceived likelihood of being victimized (i.e., personality traits). As only a few studies have previously identified a small correlation between nonverbal cues (e.g., gait, head movements) and the perceived likelihood of being victimized in the future, it is possible that this is not a true effect, but rather a random finding. If in fact this is a true effect, however, it is important to identify whether the association can be better explained by other characteristics (i.e., personality).

We are therefore asking you for your consent to have your video used for these purposes in the future now that you are fully aware of the nature of the study. If you consent for your data to be utilized in further studies, that means that collected videotapes could be shown and rated on personality traits, and perceived likelihood of future victimization by student and inmate samples, at a later date. Importantly, as your videos will be shown to other students in future studies, it is possible that these students may be your peer, friends, or classmates. Please keep this in mind when deciding if you wish to consent to your video being used in the future. You may still consent to your video to be used for the purposes of the present study even if you do not wish for your video to be used in future research. You will be shown the videotape prior to consenting.

Please note that for the purpose of the present study, future studies, or academic purposes, your video will not contain audio. If you do not provide consent at this time, the video will be deleted in front of you.

Right to withdraw: Given that you are now aware of the true purpose of the study, you have the right to withdraw. Should you choose to withdraw during the remainder of the

study, we will destroy any data that has already been collected. You will still receive 1.00% course credit or \$20 payment should you choose to withdraw.

Remuneration: You will still receive the initial 1.00% course credit or \$20 payment.

Potential risk and discomfort: There is minimal risk with sharing your data with the research team and allowing your videotape to be used for future research. Notably, the chances of being recognized in the video are very small, though it is possible. Keep this in mind as you decide whether to allow use of your videotape for the following purposes. There will be no indication of your name or any personal information on the videotape. You may consent to have the videotape used only for research purposes or you may choose not to consent to the release of your data.

Anonymity/confidentiality: The information that you give will in no way be linked to your name but will be identified with an arbitrary number. Data will be kept in a locked laboratory, and only individuals directly involved with the research project will have access to it. The data from this study will be used for future research studies, research publications, conference presentations, and/or teaching material. Should you wish to learn of the results of this study, we would be happy to send you a summary of the findings if you give your contact information to the researcher.

If you have any remaining concerns, questions, or comments about the experiment, please feel free to contact Jayme Stewart (Principal Investigator), at: jayme.stewart@carleton.ca or Dr. Adelle Forth (Faculty Sponsor), at: adelle.forth@carleton.ca (613-520-2600, ext. 1267).

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

Please note that you will be given up to 48 hours to email jaymestewart@carleton.ca and retract your initial consent should you feel uncomfortable with the use of your video.

Consent. I have read the above form and hereby consent to continue participating in this study. The data in this study will be used for research purposes. I am aware that the data collected in this study will be kept strictly confidential and anonymous.

By selecting yes below I indicate that I have read the above informed consent and that I am fully aware of any possible risks or consequences of participating in this study.

1. I agree to have my video and questionnaire data used for the purpose of the original study.
☐ Yes
☐ No

2. I agree to have my video rated by undergraduate/graduate students in future studies.
☐ Yes
☐ No
3. I agree to have my video rated by inmates in a future study.
☐ Yes
☐ No
4. I agree to have my video used during conferences and for teaching purposes (illustrating body language).
☐ Yes
☐ No

Appendix K

Study 1: Debriefing Form

Name and Contact Information of Researchers:

Jayme Stewart, Carleton University, MA Student, Department of Psychology
Email: jayme.stewart@carleton.ca

Supervisor and Contact Information:

Dr. Adelle Forth, Carleton University, Associate Professor, Department of Psychology
Phone: 631-520-2600, etc. 1267
Email: adelle.forth@carleton.ca

Project Title

Body Language, Personality, and Perceptions of Vulnerability.

Carleton University Project Clearance

Clearance # 111586

Date of Clearance: November 11, 2019

What are we trying to learn in this research?

The purpose of this study was to establish a relationship between body language and the likelihood of future victimization. Multiple studies have found that victims of crime walk in a different manner from non-victims (e.g., shorter strides, more slowly) and that others associate this walking pattern with a greater likelihood of experiencing victimization in the future. However, limited research has considered how other nonverbal behaviours (e.g., posture, facial expression) may relate to future victimization. The current study sought to determine whether personality traits (e.g., assertiveness, nurturance) account for the perceived likelihood of future victimization and nonverbal behaviours. **It is important to recognize that any information collected will not be used in a manner that will blame victims. There is no question that fault for victimization lies solely with the perpetrator.** What can be determined, however, are factors that may be the subject of appropriate defense training against potential victimization. If you did consent to allow your videotape to be used in future studies, we will be asking observers (i.e., students, offenders) to watch the videos to see if they are able to detect differences in walking movements. Observers will also be rating each video on perceived vulnerability to various types of victimization.

Why is this important to psychologists or the general public?

Some research has provided evidence that vulnerability cues can be inadvertently transmitted through body language. If we can distinguish a clear relationship between vulnerability cues and body language, we may be able to better protect against experiences of future victimization in some cases. Certainly, this research is expected to provide valuable insight into the relationship between vulnerability cues and body language, which has potential for yielding therapeutic benefits and preventative measures.

Please note that you will be given up to 48 hours to email jayme.stewart@carleton.ca and retract your initial consent should you feel uncomfortable with the use of your video for future research.

For identification purposes, please include the date and time that you participated in the current study in your email.

What are our hypothesis and predictions?

We predict that individuals' self-appraisals (the way people evaluate themselves) of likelihood to experience future victimization will be related to assertiveness, submissiveness and dominance.

Where can I learn more?

If you are interested in learning more about perceptions and cues of victim vulnerability, please refer to the following sources:

Book, A., Costello, K., & Camilleri, J. A. (2013). Psychopathy and victim selection: The use of gait as a cue to vulnerability. *Journal of Interpersonal Violence*, 28(11), 1-16. doi:10.1177/0886260512475315.

Ritchie, M. B., Blais, J., & Forth, A. E. (2019). Evil intentions: Examining the relationship between the dark tetrad and victim selection based on nonverbal gait cues. *Personality and Individual Differences*, 138, 126-132.

Wheeler, S., Book, A., Costello, K. (2009). Psychopathic traits and perceptions of victim vulnerability. *Criminal Justice and Behavior*, 36(6). 635-648. doi: 10.1177/0093854809333958.

Is there anything I can do if I found this experiment to be emotionally upsetting? Yes. If you feel any distress or anxiety after participating in this study, please feel free to contact the please contact Carleton University Health and Counseling Services at 613-520- 6674, the Carleton Sexual Assault Support Centre at 613-620-1030, and/or access "Empower Me" using the following link, <https://students.carleton.ca/services/empower-me-counselling-services/>. If you live in the Ottawa area you can also contact the Distress Center of Ottawa and Region at 613-238-3311, the Ottawa Rape Crisis Centre at 613-562-2333, and/or the Sexual Assault Support Centre of Ottawa at 613- 234-2266. If you are not located in the Ottawa area the telephone number for your local Crisis Line can be found at the front of most phone books.

What if I have questions later?

If you have any remaining concerns, questions, or comments about the experiment, please feel free to contact Jayme Stewart (Principal Investigator), at: jayme.stewart@carleton.ca or Dr. Adelle Forth (Faculty Sponsor), at: adelle.forth@carleton.ca (613-520-2600, ext. 1267).

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

Thank you for taking the time to participate in this study!

Your participation is greatly appreciated!

Appendix L

Short Dark Tetrad

Citation:

Paulhus, D. L., Buckels, E. E., Trapnell, P.D., & Jones, D. N. (2018). *The Short Dark Tetrad (SD4)*. Introduced at the meeting of the International Conference for Applied Psychology, Montreal, Canada.

Instructions: Rate your agreement with each statement using the 5-point scale below. You may skip any questions you do not wish to answer.

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

1. It's not wise to let people know your secrets.
2. Whatever it takes, you must get the important people on your side.
3. Avoid direct conflict with others because they may be useful in the future.
4. Keep a low profile if you want to get your way.
5. Manipulating the situation takes planning.
6. Flattery is a good way to get people on your side.
7. I love it when a tricky plan succeeds.
8. People see me as a natural leader.
9. I have a unique talent for persuading people.
10. Group activities tend to be dull without me.
11. I know that I am special because people keep telling me so.
12. I have some exceptional qualities
13. I'm likely to become a future star in some area.
14. I like to show off every now and then.
15. People often say I'm out of control.
16. I tend to fight against authorities and their rules.
17. I've been in more fights than most people of my age and gender.
18. I tend to dive in, then ask questions later.
19. I've been in trouble with the law.
20. I sometimes get into dangerous situations.
21. People who mess with me always regret it.
22. Watching a fist-fight excites me.
23. I really enjoy violent films and video games.
24. It's funny when idiots fall flat on their face.
25. I enjoy watching violent sports.
26. Some people deserve to suffer.
27. Just for kicks, I've said mean things on social media.
28. I know how to hurt someone with words alone.

Appendix M

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

Direct - Physical

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

Vicarious

1. In video games, I like the realistic blood spurts.
1 2 3 4 5
2. I love to watch YouTube clips of people fighting.
1 2 3 4 5

3. I enjoy watching cage fighting (or MMA), where there is no escape.

1 2 3 4 5

4. I sometimes replay my favorite scenes from gory slasher films.

1 2 3 4 5

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

1 2 3 4 5

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

1 2 3 4 5

7. In professional car-racing, it's the accidents that I enjoy most.

1 2 3 4 5

Appendix N

Five Factor Machiavellianism Inventory

Instructions: The following statements deal with how you think, feel, and act. Please read each item carefully and circle the number that best corresponds to your agreement or disagreement. If you **disagree strongly select 1**, if you **disagree a little select 2**, if you **neither agree nor disagree select 3**, if you **agree a little select 4**, and if you **strongly agree select 5**. There are no right or wrong answers, and you need not be an expert to complete this questionnaire. You may skip any questions you do not wish to answer.

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

1. I am not an ambitious person.
2. My friends would call me lazy.
3. I will go out of my way to help other people.
4. In meetings, I typically let others do the talking.
5. I don't seem to be completely successful at anything.
6. I like to carefully consider the consequences before I make a decision
7. People would describe me as emotionally stable.
8. Humility is overrated.
9. I like to map out my projects before I begin.
10. I am confident interacting with others.
11. Sometimes you have to lie to get things done.
12. I would rather be known as "practical" than "kind"
13. It is important to be wary of others' motives.
14. I have a strong drive for power.
15. I work hard to pursue my goals.
16. I try to help those who are less fortunate
17. I am a very persuasive person.
18. People look at me to "get the job done"
19. "Act first, think later." Describes me well.
20. When I'm under a great deal of stress, sometimes I feel like I'm doing to pieces.
21. I am more intelligent than more people my age.
22. I like having everything in its own, proper place.
23. I feel inferior to others.
24. I'm not crafty or sly.
25. I'm not a particularly sympathetic person.
26. I think that most people try to be honest.
27. I aspire for greatness.
28. I have lots of energy most days.
29. I think it is important to be charitable to others.
30. I do not have a problem with speaking my mind.

31. I am efficient and effective at my work.
32. I tend to jump right into things without thinking very far ahead.
33. I get so emotional that I can't think straight.
34. It's easy for me to outsmart my peers.
35. I never seem to be able to get organized.
36. I am very sure of myself.
37. I use flattery to get what I want.
38. I don't worry about other people's needs if they conflict with my own.
39. I have a great deal of faith in human nature.
40. I want to be an important person.
41. A lot of other people are more active than I am.
42. I view others as tools to be used and manipulated.
43. People would say that I have trouble standing up for myself.
44. I am often unsure of how to proceed in my life.
45. I don't make many spur of the moment decisions.
46. I am not easily flustered.
47. I am better than others.
48. I prefer to be spontaneous rather than planning everything out.
49. I am not easily embarrassed.
50. Being honest all of the time won't lead to success.
51. Other people describe me as cold-hearted.
52. I tend to assume the best about people.

Appendix O

Narcissistic Personality Inventory – 16.

Instructions: Read each pair of statements below and place an “X” by the one that comes closest to describing your feelings and beliefs about yourself. You may feel that neither statement describes you well but pick the one that comes closest. You may skip any questions you do not wish to answer.

1. ☐ I really like to be the center of attention
 ☐ It makes me uncomfortable to be the center of attention
2. ☐ I am no better or no worse than most people
 ☐ I think I am a special person
3. ☐ Everybody likes to hear my stories
 ☐ Sometimes I tell good stories
4. ☐ I usually get the respect that I deserve
 ☐ I insist upon getting the respect that is due me
5. ☐ I don't mind following orders
 ☐ I like having authority over people
6. ☐ I am going to be a great person
 ☐ I hope I am going to be successful
7. ☐ People sometimes believe what I tell them
 ☐ I can make anybody believe anything I want them to
8. ☐ I expect a great deal from other people
 ☐ I like to do things for other people
9. ☐ I like to be the center of attention
 ☐ I prefer to blend in with the crowd
10. ☐ I am much like everybody else
 ☐ I am an extraordinary person
11. ☐ I always know what I am doing
 ☐ Sometimes I am not sure of what I am doing
12. ☐ I don't like it when I find myself manipulating people
 ☐ I find it easy to manipulate people
13. ☐ Being an authority doesn't mean that much to me
 ☐ People always seem to recognize my authority
14. ☐ I know that I am good because everybody keeps telling me so
 ☐ When people compliment me I sometimes get embarrassed

15. ___ I try not to be a show off
 ___ I am apt to show off if I get the chance
16. ___ I am more capable than other people
 ___ There is a lot that I can learn from other people

Appendix P

Perceived Personality, Emotionality, and Vulnerability Questionnaire

On a scale from 1 (completely false) to 5 (completely true), rate the person in the clip on the following statements:

1. This person is assertive: _____
2. This person is submissive: _____
3. This person is anxious: _____
4. This person is agreeable: _____
5. This person is conscientious: _____
6. This person is dominant: _____
7. This person is extraverted: _____
8. This person is open to new experiences: _____
9. This person is confident: _____
10. This person has low self-esteem: _____
11. This person is relaxed: _____
12. This person is warm: _____
13. This person is nurturing: _____
14. This person is naïve: _____

Answer the remaining questions to the best of your ability:

15. On a scale from 0% to 100%, how vulnerable do you think the person from the video clip is to the following types of victimization?
 - a. Sexual victimization (e.g., sexual abuse or assault): _____
 - b. Nonsexual violent victimization (e.g., physical abuse, assault, threats, armed robbery): _____

16. What information did you use in making these decisions (select all that apply)?

- a. I don't know
- b. I just knew it
- c. Their posture
- d. Their physical appearance (e.g., looks, attractiveness)
- e. The way their upper body moved
- f. Their dress
- g. The way their lower body moved
- h. Their facial expressions
- i. Their emotional appearance (e.g., shy, confident)

17. Did you know the person in this video clip prior to watching the video? _____

18. On a scale of 1 (very unattractive) to 7 (very attractive), how attractive was the person in the video? _____

Appendix Q

Study 2: Recruitment Notice

Study Name: Understanding Vulnerability in Relation to Behaviour and Personality.

Description: This study will ask you to watch a series of 8 short videos, complete a demographic questionnaire, a series of questionnaires that will inquire about your personality traits (e.g., openness to experience, extraversion), including psychopathic, sadistic, Machiavellian, and narcissistic traits (e.g., manipulation, antisocial activity, impulsivity, grandiosity), and a questionnaire inquiring about your perceptions of the likelihood that others may be victimized in the future. Some of the questionnaires will inquire about previous antisocial activity, such as your involvement the participants involvement with regards to vandalism, theft and violence, which may cause some psychological discomfort.

Benefits of Participating: All participants will receive 0.50% course credit.

Duration and Locale: This study will be conducted online through Qualtrics and will take about 45 to 60 minutes to complete.

Selection Criteria: Those who previously participated '*Body Language, Personality, and Perceptions of Vulnerability*' are not eligible to participate in the current study.

Research Personnel:

MA Researcher
Jayme Stewart
jayme.stewart@carleton.ca

Academic Supervisor
Adelle Forth
adelle.forth@carleton.ca

This study has received clearance by the Carleton University Research Ethics Board B (CUREB-B Clearance #111626).

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

Appendix R

Study 2: Consent Form

Name and Contact Information of Researchers:

Jayme Stewart, Carleton University, MA Student, Department of Psychology
Email: jayme.stewart@carleton.ca

Supervisor and Contact Information:

Dr. Adelle Forth, Carleton University, Associate Professor, Department of Psychology
Phone: 631-520-2600, ext. 1267
Email: adelle.forth@carleton.ca

Project Title

Understanding Vulnerability in Relation to Behaviour and Personality.

Carleton University Project Clearance

CUREB-B Clearance #111626

Date of Clearance: _____

Invitation

The information in this form is intended to help you understand what we are asking of you so that you can decide whether you agree to participate in this study. Your participation in this study is voluntary, and a decision not to participate will not be used against you in any way. As you read this form, and decide whether to participate, please ask all the questions you might have, take whatever time you need, and consult with others as you wish.

What is the purpose of the study?

The general purpose is to explore potential relationships between personality traits (e.g., honesty-humility, extraversion) including psychopathic, sadistic, Machiavellian, and narcissistic traits (e.g., manipulation, antisocial activity, impulsivity, grandiosity), nonverbal behaviours, and perceptions of vulnerability to future victimization. First you will watch a series of 8 short videos (approximately 45 seconds in length) and following each video, you will rate each person on a series of personality (e.g., assertiveness, agreeableness) and emotionality (e.g., relaxed) traits, as well as the person's likelihood to experience future victimization. Second, you will be asked to complete a series of self-report questionnaires that measure personality traits and demographic information.

What will I be asked to do?

This study involves watching a series of eight short videos, collecting demographic information and answering a series of 8 self-report questionnaires. This study will take approximately 45-60 minutes to complete.

Risks and Inconveniences

You will be asked to rate how vulnerable you feel others are to future victimization. Should you feel discomfort at any point during the study, please be reminded that your participation is entirely voluntary, that you may choose not to answer any question, and that you may withdraw from the study at any time without penalty.

Possible Benefits

You may not receive any direct benefit from your participation in this study. However, your participation may allow researchers to better understand vulnerability cues that may be associated with perceptions of vulnerability. In determining the non-verbal cues that may make people vulnerable to victimization, we can begin to develop intervention strategies that may help to prevent future incidences of victimization.

It is important to note that this research is correlational and should not be interpreted to mean that victims are to blame for their victimization as a result of their body language or personality. There is no question that fault for victimization lies solely with the perpetrator.

Compensation/Incentives

You will receive a **0.50% grade increase** toward your introductory psychology (Psyc1001, Psyc1002) or second-year psychology course (Psyc 2001, Psyc 2002) final grade for completing this questionnaire.

No waiver of your rights

By signing this form, you are not waiving any rights or releasing the researchers from any liability.

Withdrawing from the study

If you withdraw your consent during the course of the study, all information collected from you before your withdrawal will be retained. However, if you wish to have this information removed completely, you may request that your data be removed from the study and deleted by notice given to the Principal Investigator (named above) within **48 hours** after your completion.

You will still receive your 0.50% credit should you choose to withdraw.

Confidentiality

We will treat your personal information as confidential, although absolute privacy cannot be guaranteed. No information that discloses your identity will be released or published without your specific consent. Research records may be accessed by the Carleton University Research Ethics Board in order to ensure continuing ethics compliance.

The aggregate data from this study may be posted to online free repositories (e.g., open science framework). Further, the results of this study may be published or presented at an academic conference or meeting, but the survey data will be anonymized, and data will be presented in a statistical form. You will be assigned a code so that your identity will not be directly associated with the data you have provided. All data, including coded information, will be kept in a password-protected file on a secure computer.

Because you will be granted course credit, identifying information will be retained using a code until the course credit or payment is granted.

Data Retention

After the study is completed, your de-identified data will be retained for future research use.

New information during the study

In the event that any changes could affect your decision to continue participating in this study, you will be promptly informed.

Ethics review

This project was reviewed and cleared by the Carleton University Research Ethics Board B. If you have any ethical concerns with the study, please contact Carleton University Research Ethics Board (by phone at 613-520-2600 ext. 4085 or by email at ethics@carleton.ca).

Consent. I have read the above form and hereby consent to continue participating in this study. The data in this study will be used for research publications and/or teaching purposes. I am aware that the data collected in this study will be kept strictly confidential and anonymous. By clicking on the box, I consent to participate in this study.

By selecting yes below I indicate that I have read the above informed consent and that I am fully aware of any possible risks or consequences of participating in this study.

☐ Yes, I consent to participate in the current study.

☐ No, I do not consent to participate in the current study.

Appendix S

Study 2: Debriefing Form

Debriefing Form

Name and Contact Information of Researchers:

Jayne Stewart, Carleton University, MA Student, Department of Psychology
Email: jayne.stewart@carleton.ca

Supervisor and Contact Information:

Dr. Adelle Forth, Carleton University, Associate Professor, Department of Psychology
Phone: 631-520-2600, ext. 1267
Email: adelle.forth@carleton.ca

Project Title

Understanding Vulnerability in Relation to Behaviour and Personality.

Carleton University Project Clearance

CUREB-B Clearance #111626

Date of Clearance: January 30, 2020

What are we trying to learn in this research?

The purpose of this study is to investigate whether individuals with certain personality traits are more accurate in perceiving a target's vulnerability to victimization based on perceived personality and nonverbal cues. This study is attempting to discover what factors relate to accurate perceptions of vulnerability to victimization in a university sample.

In this study we measured a range of personality traits (i.e., honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, openness), including Machiavellianism, psychopathy, and sadism (e.g., impulsivity, manipulation, lack of remorse, antisocial activity). We also asked you to rate 8 persons presented in the video-clips on their likelihood to experience future sexual and violent victimization on a scale of 0% to 100%. You were also asked to provide a rationale for your rating in order for us to determine what nonverbal cues influenced your perceptions of vulnerability to victimization.

Why is this important to psychologists or the general public?

In determining the non-verbal cues that make people vulnerable to victimization, we can begin to develop intervention strategies that may help to prevent future incidences of victimization.

It is important to note that this research is correlational and should not be interpreted to mean that victims are to blame for their victimization as a result of their body language or personality. There is no question that fault for victimization lies solely with the perpetrator.

What are our hypothesis and predictions?

We predict that individuals with higher levels of psychopathic, sadistic, Machiavellian and narcissistic traits, and individuals with lower levels of honesty-humility will be more accurate in their ratings of vulnerability to victimization.

Where can I learn more?

If you are interested in learning more about perceptions and cues of victim vulnerability, please refer to the following sources:

Book, A., Costello, K., & Camilleri, J. A. (2013). Psychopathy and victim selection: The use of gait as a cue to vulnerability. *Journal of Interpersonal Violence*, 28(11), 1-16. doi:10.1177/0886260512475315.

Ritchie, M. B., Blais, J., & Forth, A. E. (2019). Evil intentions: Examining the relationship between the dark tetrad and victim selection based on nonverbal gait cues. *Personality and Individual Differences*, 138, 126-132.

Wheeler, S., Book, A., Costello, K. (2009). Psychopathic traits and perceptions of victim vulnerability. *Criminal Justice and Behavior*, 36(6). 635-648. doi: 10.1177/0093854809333958.

Is there anything I can do if I found this experiment to be emotionally upsetting? Yes. If you feel any distress or anxiety after participating in this study, please feel free to contact the please contact Carleton University Health and Counseling Services at 613-520- 6674, the Carleton Sexual Assault Support Centre at 613-620-1030 and/or access “Empower Me” using the following link, <https://students.carleton.ca/services/empower-me-counselling-services/>.. If you live in the Ottawa area you can also contact the Distress Center of Ottawa and Region at 613-238-3311, the Ottawa Rape Crisis Centre at 613-562-2333, and/or the Sexual Assault Support Centre of Ottawa at 613- 234-2266. If you are not located in the Ottawa area the telephone number for your local Crisis Line can be found at the front of most phone books.

What if I have questions later?

If you have any remaining concerns, questions, or comments about the experiment, please feel free to contact Jayme Stewart (Principal Investigator), at: jayme.stewart@carleton.ca or Dr. Adelle Forth (Faculty Sponsor), at: adelle.forth@carleton.ca (613-520-2600, ext. 1267).

If you have any ethical concerns with the study, please contact the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

Thank you for taking the time to participate in this study!

Your participation is greatly appreciated!

Appendix T

Tables of Additional Analyses

Table T.1

Means, Standard Deviations and Internal Consistencies for Honesty-humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, Openness to Experience, Assured-Dominant and Warm-Agreeable Personality Traits

Scale	<i>M</i>	<i>SD</i>	Range	Chronbach's α
HEXACO-60				
Honesty-humility	34.65	6.55	19-47	.760
Emotionality	36.35	6.57	22-49	.768
Extraversion	32.01	8.69	14-48	.886
Agreeableness	30.88	7.25	14-46	.831
Conscientiousness	36.65	6.67	17-49.21	.819
Openness to Experience	34.96	5.96	21-47	.677
IASR-B5				
Assured-Dominant	34.15	11.64	16-64	.893
Warm-Agreeable	52.20	8.18	18-64	.940

Note. HEXACO-60 = Honesty-humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, and Openness to experience (Ashton & Lee, 2009); IASR-B5 = The Revised Interpersonal Adjectives Scale – Big Five (Trapnell & Wiggins, 1990).

Table T.2

Bivariate Correlations between Vulnerability to Future Victimization, Honesty-humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, Openness to Experience, Assured-Dominant and Warm-Agreeable Personality Traits

Vulnerability	H ^a	E ^a	X ^a	A ^a	C ^a	O ^a	AD ^a	WA ^b
Sexual	.118	.410**	-.252	.051	.010	.048	-.351*	.112
Nonsexual Violent	.068	.261	-.206	.241	-.191	.062	-.250	.011

Note. H = Honesty-humility; E = Emotionality; X = eXtraversion; A = Agreeableness; C = Conscientiousness; O = Openness to Experience; AD = Assured-Dominant; WA = Warm-Agreeable.

^aPearson's r ; ^bSpearman's rho.

* $p < .05$. ** $p < .01$.

Table T.3

Bivariate Correlations between Nonverbal Behaviours and Honesty-humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, Openness to Experience, Assured-Dominant and Warm-Agreeable Personality Traits

Nonverbal Behaviour	H ^a	E ^a	X ^a	A ^a	C ^a	O ^a	AD ^a	WA ^b
1. Gaze Ahead	.061	.076	.087	-.020	.144	-.056	.079	.217
2. Gaze Away	-.094	.141	-.184	-.060	.075	-.027	-.139	-.050
3. Frown	.126	-.027	-.272	-.031	-.015	.127	-.221	.015
4. Smile	-.200	-.043	.178	.136	-.179	.153	.166	.110
5. Laugh	-.092	-.001	.297	.308	-.176	-.258	.087	.049
6. Animated	-.245	-.200	.120	-.005	-.144	.028	.256	-.115
7. Engaged	-.058	-.108	.231	.259	-.065	-.105	.165	.163
8. Moved Feet	-.233	.247	-.285	.086	-.132	-.201	-.350*	.023
9. Moved Arm	-.113	.065	-.140	.258	-.281	-.134	-.199	.012
10. Moved Leg	.060	.359*	-.284	.250	.053	-.052	-.394*	.319*
11. Crossed Leg	.202	-.064	-.005	-.240	.142	-.069	-.051	-.105
12. Crossed Feet	-.056	.238	-.259	.148	-.183	-.324*	-.259	.233
13. Tucked Leg	.033	-.231	.242	-.064	-.113	.192	.148	.195
14. Crossed Leg on Chair	-	-	-	-	-	-	-	-
15. Crossed Arm	-.158	-.053	-.319*	-.093	-.262	.161	-.314*	-.002
16. Crossed Hands	.572**	.025	.279	.340*	.296	.161	.106	.447**
17. Open Posture	-.267	.090	.123	.111	-.300	.016	.122	.111
18. Relaxed Posture	-.130	.152	.160	.083	-.210	-.166	.082	.024
19. Tense Posture	.293	-.084	-.146	-.092	.239	-.138	-.282	.132
20. Self-touch	.090	.541**	-.371*	.355*	.081	-.307	-.557**	.467**

Note. - = could not be computed because at least one variable is constant; H = Honesty-humility; E = Emotionality; X = eXtraversion; A = Agreeableness; C = Conscientiousness; O = Openness to Experience; AD = Assured-Dominant; WA = Warm-Agreeable.

^APearson's r ; ^BSpearman's rho.

* $p < .05$. ** $p < .01$.