DARK TETRAD PERSONALITY TYPES AND SEXUAL BEHAVIOURS AMONGST AFRICAN STUDENTS

By

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THESIS

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DECLARATION

I, Baloyi Valeria, declare that the thesis hereby submitted to the University of Limpopo, in fulfillment of the Doctor of Philosophy in Psychology, has not been previously submitted for degree purposes at any other university, that it is my own work in design and execution, and that all sources contained therein have been duly acknowledged.

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BALOYI V **DATE**

DEDICATION

This thesis is dedicated to my late father, Freddy Mashosho Baloyi. In memory of his love, support and the confidence he had in my career path. His memory lives with me daily. His legacy continues. ***Rest in peace Mulozwi, Mbulwa yaku fuma, Khalanga, I Mburhi ya Ntshava, Muthondholovhani vaka ncila ava ololi*** *!!*

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ABSTRACT

The present study investigated the gender moderated relationship between the dark tetrad personality types and sexual behaviours among African university students. Two studies were conducted using conveniently selected samples from two universities in Limpopo, South Africa. Both studies were quantitative in nature using a cross-sectional research design. An integrative theoretical approach was utilized in the conceptualization of the studies, and data was analyzed using structural equation modeling (SEM). The first study (N = 261) determined the relationship between the dark tetrad personality types and sexual behaviours conceptualized as infidelity, sexual aggression, and socio-sexuality. It was only sadism that had the capacity to predict infidelity and SOI-R desire. Regarding moderation, the results showed that gender only moderates the associations between Machiavellianism and SOI-R behaviour, psychopathy and SOI-R attitude, and sadism and infidelity. The second study (N = 275) examined if the relationship between the Dark Tetrad personality types and socio-sexuality would be mediated by adversarial sexual beliefs (ASB) and ambivalent sexism (benevolent [BS] and hostile sexism [HS]). Results showed that the relationship between sadism and SOI-R behaviour and desire, Machiavellianism and SOI-R behaviour and desire were fully mediated by BS, and the association between sadism and all the SOI-R components, Machiavellianism and all the SOI-R components, and psychopathy and all the SOI-R components were fully mediated ASB. Additionally, gender only moderated the ASB mediated associations between sadism and SOI-R behaviour, and sadism and SOI-R attitude. Ultimately, the study advances recommendations for future studies.

Keywords: dark tetrad personality types, infidelity, sexual aggression, adversarial sexual beliefs, ambivalent sexism and socio-sexuality.

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ABBREVIATIONS

AHBS	-	Adversarial heterosexual beliefs scale
ASB	-	Adversarial sexual beliefs
ASS	-	Ambivalent sexism scale
BS	-	Benevolent sexism
CFI	-	Comparative fit index
DSM-5	-	Diagnostic and statistical manual for mental disorders, fifth edition
GFI	-	Goodness of fit index
HM	-	Hostile masculinity
HS	-	Hostile sexism
IPS	-	Infidelity proneness scale
IS	-	Impersonal sex
ML	-	Maximum likelihood
NFI	-	Normed fit index
PA	-	Path analysis
RMSEA	-	Root mean square error of approximation
SCS	-	Sexual coercion scale
SD	-	Standard deviation
SD3	-	Short dark triad
SEM	-	Structural equation modeling
SOI-R	-	Revised socio-sexual orientation inventory
SPSS	-	Statistical package for social sciences
TLI	-	Tucker-Lewis index

CHAPTER ONE
INTRODUCTION AND BACKGROUND TO STUDY ONE

1.1 Introduction

Previous studies on malevolent personalities has focused on the dark triad personality types comprising of the subclinical categories of psychopathy (Hare, 1996), narcissism (Kernberg, 1975; Kohut, 1977; Raskin & Hall, 1979) and Machiavellianism (Christie & Geis, 1970). These personality types have been shown to associate moderately with each other (Jakobwits & Egan, 2006; Jones & Figueredo, 2013; Lee & Ashton, 2005), yet each has distinct personality facets (Jones & Paulhus, 2010; Vernon, Villani, Vickers, & Harris, 2008). Recently, a new construct labeled the 'dark tetrad' personality types was proposed and empirically tested (Book et al., 2016; March, Grieve, Marrington, & Jonason, 2017; Međedović & Petrović, 2015). It incorporates sadism as an additional "dark" personality.

Sadism was added as a fourth "dark" personality type because of its "dark" element, the tendency to enjoy cruelty in everyday interactions (Book et al., 2016; Buckels, Jones, & Paulhaus, 2013). Chabrol, Van Leeuwen, Rodgers, and Séjourné (2009) found that sadism was linked with antisocial behaviour independent of its overlap with the dark triad personality types in a sample of adolescents. In line with Chabrol et al. (2009), Buckels et al. (2013) found sadism to be an additional dark personality type operating in the subclinical domain. In addition, Buckels et al. (2013) indicate that sadism remains a unique predictor of antisocial outcomes, even when controlling for its overlap with the dark triad personality types (also see Chabrol, Melioli, Van Leeuwen, Rodgers, & Goutaudier, 2015; Međedović & Petrović, 2015). Importantly, sadism appears to be much strongly related to psychopathy and Machiavellianism than narcissism is related to the personality types (Book et al., 2016).

The personality types that make up the so-called dark tetrad have features which render them unattractive to others. Hare (1996) describes psychopathy as a socially devastating disorder which is characterized by impulsivity, low affect, irresponsibility, sensation seeking, manipulation, and poor social relations. Christie and Geis (1970) described Machiavellianism as a personality type characterized by manipulation. Narcissism, on the other hand, has been described as the attention-seeking personality, characterized by feelings of dominance, grandiosity and superiority (Raskin & Hall, 1979). O'Meara, Davies, and Hammond (2011) described sadism as a longstanding pattern of cruelty, aggression or demeaning behaviours towards others which are intentionally inflicted physically, sexually or psychologically, in order to assert power and dominance for pleasure.

The dark tetrad personality types share a common callousness and malevolence, although each member has its own motivation and behavioural profile. Jones and Paulhus (2010) found that psychopaths were most likely to be aggressive when physically attacked (i.e., revenge driven aggression), while narcissists aggressed in response to ego insults (i.e., insecurity driven aggression). In contrast, Machiavellians resist provocation when there is no personal benefit in violence while sadists aggress for pleasure (i.e., pleasure driven aggression). Sadism has been added to the list of the dark personality types because of its affinity to this group. However, only a few studies have investigated the construct of the dark tetrad personality types (Buckels et al., 2013; Chabrol et al., 2009; van Geel, Goemans, Toprak, & Vedder, 2017; March & Smoker, 2017), thus, warranting additional research. The current study, therefore, sought to examine the similarities and differences that exist among the dark tetrad personality types, especially with regards to sex-related constructs such as infidelity, sexual aggression, and socio-sexuality in an African context. Sex-related constructs tend to exhibit a strong gender influence. Thus, it was included in the design of the present study.

1.2 **Problem statement**

From a personality perspective, Buckels et al. (2013) argue that the fact that some people desire to be vindictive while others dislike it, points to an individual difference. Most people experience discomfort after hurting an innocent person, whereas others finds it thrilling, pleasurable, or even sexually stimulating. Instead of seeking to ease the pain, the individuals may see an opportunity to be vicious, exercise brutality, and indulge their appetite for cruelty (Baumeister & Campbell, 1999). The dark tetrad personality types, which comprise of subclinical psychopathy, narcissism, Machiavellianism, and sadism have been identified as variants of malevolent personalities that find pleasure in cruelty or exploiting others. In light of previous findings of an overlap of the dark triad personality types with sadism (Buckels et al., 2013; Chabrol et al., 2009), the current study explores the behavioural similarities and differences that exist amongst the members of the dark tetrad personality types.

The extant literature indicates that dark personality types exhibit behaviours high in agency (getting ahead) and low in communion (getting along), which reflects their anti-social nature (Jones & Paulhus, 2010; Paulhus & Williams, 2002). Subsequently, Rauthmann (2012) found that the dark personality types tend to employ self-beneficial and exploitative behaviours in interpersonal situations. Hence, in social situations their character is often marked by cold-heartedness, self-beneficial and manipulative behaviours (Paulhus & Williams, 2002). In addition, previous findings have indicated that there is an association between the dark personality types and behaviours such as mating strategies, self-control, mate retention, mate poaching and short-term mating (Jonason, Li, & Buss, 2010; Jonason, Li, Webster, & Schmitt, 2009; Jones & Paulhus, 2010). Hence, it was prudent in the present study to initiate research that compares members of the dark tetrad personality type's scores on infidelity, sexual aggression and socio-sexuality to shed more light into the psychological understanding of the personality

styles, particularly after the incorporation of sadism as the fourth member in the framework of the dark personality types.

1.3 Background of the study

According to Jones and Figueredo (2013), literature is replete with debates about the overlap among antagonistic personalities. They indicate that the various personalities that are shown to predict socially antagonistic behaviours have common elements, such as callousness and deception (Marcus, Preszler, & Zeigler-Hill, 2018). Despite the symptom overlap and commonalities in the behavioural sequelae of the dark personality types, little has been documented that specifically addresses the differences and similarities which exist amongst the members of the dark tetrad personality types in a student population of African descent. In support of the aforementioned postulation, Rossier, Dahourou, and McCrae (2005) note that African cultures are usually underrepresented in personality research.

This study was motivated by the findings of Buckels et al. (2013) and Chabrol et al. (2009) which indicate that the dark triad personality construct is incomplete, missing the villainous sadism and that the true dark core of human personality is the dark tetrad. They argue that sadists also crave cruelty and find the act of hurting innocent people more pleasurable and exciting. Despite their diverse origins, Hare and Hart (1998) indicate that, to a varying degree, all dark personality types have socially undesirable traits with behavioural tendencies towards self-promotion, emotional coldness, duplicity, and aggression. In line with this, Jones and Figueredo (2013) argue that in an antagonistic social strategy, individuals see others as objects to be exploited or rivals to be defeated.

Yet, despite considerable attention on the dark personality types among the general public, little research has been conducted in a nonclinical population from

South Africa. Hence, the current study investigates the relationship that exists amongst the dark tetrad personality types and infidelity, sexual aggression and socio-sexuality. The study further investigates whether gender differences will also be evident in this study as observed in Chabrol et al. (2009), even though this was not the case in the findings of Buckels et al. (2013).

1.4 Significance of the study

Past research on malevolent personalities has centered on subclinical psychopathy, narcissism, and Machiavellianism, which together constitute the dark triad of personality types. The research conducted by Buckels et al. (2013) introduced sadism, the dispositional tendency to take pleasure in others' suffering, as an additional dark personality type operating in the subclinical domain. Buckels et al. further indicated that sadism remained a unique predictor of sadistic choice, even when controlling for its overlap with the dark triad personality types of psychopathy, Machiavellianism and narcissism. To date very little is known locally and internationally about the dark tetrad personality types. Thus, the current study sought to contribute additional insight to the psychological understanding of the dark tetrad personality construct and its unique behavioural profile.

1.5 Aim of the study

The aim of the study was to investigate the relationship between the dark tetrad personality types and infidelity, sexual aggression, and socio-sexuality (conceptualized in this study as sexual behaviours), as well as the influence of gender on this relationship.

1.6 Objectives of the study

1.6.1 To evaluate whether each of the dark tetrad personality types predispose individuals differently towards infidelity, sexual aggression, and socio-sexuality.

1.6.2 To determine if gender will act as a moderator on the relationship between the dark tetrad personality types and infidelity, sexual aggression, and socio-sexuality.

1.7 Hypotheses of the study

H_1: Each dark tetrad personality type will predict infidelity, sexual aggression, and socio-sexuality.

H_2: The relationship between the dark tetrad personality types and infidelity, sexual aggression, and socio-sexuality will be moderated by gender.

1.8 Summary of the chapter

This chapter presented a general overview and a brief background of the dark tetrad personality types' sexual behaviours. It further outlined the aim, objectives and hypotheses of the study. The next chapter presents the definition of concepts used, theoretical framework, and a review of the literature relevant to the dark tetrad personality types' sexual behaviours to ensure a better understanding of the phenomenon.

CHAPTER TWO
THEORETICAL CONCEPTS AND LITERATURE REVIEW

2.1 Operational definitions of concepts

2.1.1 Dark tetrad personality types

The dark tetrad personality types in the current study refer to a set of four personality types commonly referred to as ‘dark personalities’, consisting of the following: subclinical narcissism, which refers to a pattern of grandiosity, need for admiration and lack of empathy (American Psychiatric Association, 2013); psychopathy which is defined by a constellation of affective interpersonal and behavioural characteristics; Machiavellianism, which refers to a manipulative personality, one which believes that the ends justify the means regardless of any negative human consequences, such as personal hurt or suffering (Christie & Geis, 1970); and sadism, which is defined by a longstanding pattern of cruelty, aggression, or demeaning behaviours towards others, which are intentionally inflicted physically, sexually, or psychologically, in order to assert power and dominance for pleasure (O’Meara et al., 2011). The ‘dark tetrad’ construct incorporates sadism as an extension of the dark triad concept, which consists of subclinical narcissism, psychopathy, and Machiavellianism (Paulhus & Williams, 2002). Individuals who possess any of the dark tetrad personality types are likely to be selfish, possess a grandiose sense of importance and feel an increased sense of entitlement. Furthermore, these individuals are often preoccupied with expressions of dominance and power.

2.1.2 Personality

The current diagnostic manual of mental disorders, the DSM-5 (American Psychiatric Association, 2013), defines ‘personality’ as enduring patterns of

perceiving, relating to, and thinking about the environment and oneself. The patterns are exhibited in a wide range of social and interpersonal contexts. The definition was considered adequate to describe personality in this study.

2.1.3 **Sexual behaviours**

Sexual behaviours in the present study refer to infidelity, sexual aggression, and socio-sexuality. The term ‘infidelity’ refers to emotional and physical intimacy of participants with a specific person outside their primary relationship and, according to Wheeler, George and Dahl (2002), sexual aggression refers to sexual coercion and assault inclusively. Socio-sexuality refers to the dimensions of sexuality as measured by Penke and Asendorpf’s (2008) scale. The dimensions consist of behaviour, attitude and desire. They reflect an individual’s engagement in sexual behaviour with a partner without commitment to a long-term intimate relationship.

2.1.4 **Adversarial sexual beliefs (ASB)**

ASB in the present study are defined as a degree to which a person believes that sexual relationships are antagonistic, characterized by manipulation or exploitation (Lonsway & Fitzgerald, 1995). Studies also included hostility towards women (Glick & Fiske, 2000) which shares a common ideology with acceptance of interpersonal violence and rape myth (Lonsway & Fitzgerald (1995, cf. Chapleau, Oswald, & Russell, 2008). The definition derives from Burt (1980) and applies to both sexes rather than attitudes towards any particular sex.

2.1.5 **Ambivalent sexism**

Ambivalent sexism in the present study refers to both benevolent and hostile sexist views about women in heterosexual relationships (Glick & Fiske, 1996). Although sexist views commonly emanate from men, it is also possible for women to hold

these views about themselves and how they think men and women should behave towards each other in heterosexual relationships.

2.2 Theoretical framework

Efforts have been made both empirically and theoretically to provide an understanding of the dark personality types. It is evident that the shift from DSM-IV to DSM-5 signify a possible breakthrough in understanding the nature of the dark personality types (Eaton, Krueger, South, Simms, & Clark, 2011). The DSM-5 provides the foundation of moving from personality types being viewed within a categorical system to a new alternative dimensional framework. Eaton et al. (2011) indicate that the categorical model exposed measurements to defects of high co-morbidity, low reliability, and artificial thresholds for diagnosis. The alternative framework conceptualizes personality types in terms of dimensional traits, and thus characterizes itself as an emerging model (Strickland, Drislane, Megan, Krueger, & Christopher, 2013).

Paulhus and Williams (2002) view personality disorders as maladaptive traits and an extreme deviation from normal personality types. The dimensional model of personality considers personality disorders and personality traits as falling on a continuum. Saulsman and Page (2004) interpret this to mean that abnormal personality constructs are simply exaggerations of normal traits. According to evolutionary theorists, the dark personalities promote reproductive adaptive strategy, and may be best seen as a single conspecifics in social orientation (Gangestad & Simpson, 1990; McCrae & Costa, 2003). Mealey (1995), for example, details the exploitative tendencies of the dark personality types. Furnham, Richards, and Paulhus (2013) add that each of the dark personality types exploits others differently in a social context and their callous volatile nature leads to reproductive success. Further evidence which unifies the dark personality types was found in the trait approach, which revealed that the dark personality

types overlapped substantially and shared similar relationships (variance) as variables (McHoskey, 1995, 2001).

Some of the personality models that provided an understanding of the dark personality types include the interpersonal circumplex model, the three-factor model, the four-factor model, the famous "Big Five" or five-factor model, and the seven-factor model (Cloninger, Svrakic, & Pryzbeck, 1993; McCrae & Costa, 2003; Livelesly, Jackson, & Schroeder, 1992). The interpersonal circumplex model which is a two-factor structural model was pioneered by Bakan (1966) and Leary (1957) (Furnham et al., 2013). Agency (getting ahead) and communion (getting along) are the two factors that provide a powerful framework for representing individual differences in both normal and abnormal behaviour (Leary, 1957). The motivation of individuals with agentic orientations focus on self-enhancement, whereas communal orientations focus on enhancement of others in the group (Helgeson & Fritz, 1999). Jones and Paulhus (2011a) showed through a comprehensive analysis the overlapping of the dark personalities within the interpersonal circumplex model. That is, the dark personalities shared Quadrant II (high agency and low communion) (Furnham et al., 2013). The three-factor model of Clark and Watson (2008), and the four-factor model of Livesley (2007) were also used in understanding personality disorders as dimensional (Trull & Widiger, 2013). The personality traits which constitute the three-factor model are negative affectivity, positive affectivity and constraint, whereas, the four-factor model consists of emotional dysregulation, dissocial behaviour, inhibitedness, and compulsivity.

The Big Five or five-factor model derived from psycholexical research and incorporates five personality dimensions, namely, Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (McCrae & Costa, 2003). All of the Big Five personality dimensions have been associated with one or more of the dark personality types. Most studies consistently found negative associations of the dark personalities with Agreeableness and Conscientiousness

(see Jakobwitz & Egan, 2006; Jonason, Koenig, & Tost, 2010; Jonason, Li, & Teicher 2010; Jonason & Webster, 2010; Paulhus & Williams, 2002). The seven-factor model, which is a psychobiological theory, includes four dimensions of temperament and three dimensions, of character. The four dimensions of temperament include novelty seeking, harm avoidance, reward dependence and persistence; and the three dimensions of character include self-directedness, cooperativeness and self-transcendence (Fruyta, Van De Wieleb, & Van Heeringen, 2000). The aforementioned dimensions of the seven-factor model were also related with dark personality types (Garcia, Adrianson, Archer, & Rosenberg, 2015). The more recent approaches regard personality as a dimensional construct (Trull & Widiger, 2013). For instance, the dimensional approach to personality disorders views the dark personality types as extreme traits distributed on a behavioural continuum.

The present study aimed at investigating the relationship that exists amongst the dark tetrad personality types and sexual behaviours. Due to lack of an integrated theoretical explanation of the dark tetrad personality types, the researcher adopted an integrative approach based on the dimensional and conceptual views as well as empirical findings about the dark personality types. The reason was to describe the psychological dysfunction of the dark personality types in ways that would be valid and useful for the present study. The recognition that many of categorical models of personality disorder classification were not edifying in the conceptualization of the dark personality types has led to the adoption of an integrated theoretical approach. The current study used the DSM-5 dimensional model, incorporating elements of the evolutionary approach, trait approach, five-factor model, interpersonal circumplex model, and the seven-factor model to conceptualize the dark tetrad personality types; thus, representing the integrative approach. To understand the dark tetrad construct, the different elements/traits of the above mentioned approaches were utilized. In relation to the present study, the different approaches demonstrate that the dark tetrad personality types

significantly overlap and share common personality traits. For example, the Big Five shows that the dark tetrad personality types share the common element of disagreeableness, the DSM-5 describes them as being highly deceitful and manipulative, while in evolutionary approaches they have a sexually promiscuous mating style. Therefore, the facets from different theoretical models which represent an integrative approach were combined to assist in understanding the dark personality types' sexual behaviours. Given their overlap and commonality in personality traits, it is likely that they will score the same on different measures of sexual behaviours in this study.

2.3 Literature Review

2.3.1 Introduction

The majority of research on malevolent personalities paid attention to three personality types commonly known to as the dark triad (Paulhus & Williams, 2002) or on models of dark traits based on DSM-IV Axis II disorders (Hogan & Hogan, 2001). However, Buckels et al. (2013) introduced a fourth personality type to the dark triad personality types, to inaugurate a new construct called the dark tetrad of personality types, comprising of Machiavellianism, narcissism, psychopathy and the new addition, namely, sadism. The constellation of personality constructs has been deemed sufficient for characterizing socially aversive personality types in the subclinical range because possessing these traits is predictive of antisocial behaviour, particularly manipulation and exploitation. Paulhus's approach for classifying the dark personality types focused on abnormal traits characterized by self-promotion and inflicting pain on others (Paulhus, 2001; Paulhus & Williams, 2002). Lee and Ashton (2005) follow suite and indicate that individuals who possess characteristics of the dark personality types are likely to be selfish and possess a grandiose sense of self-importance, manipulation and exploitation. Hogans' approach, on the other hand, focused on the dark side as negative

characteristics that emerged when individuals let down their guard (Hogan & Hogan, 2001).

Book, Quinsey, and Langford (2007) indicated that people who frequently engage in manipulation and exploitation of others are able to target their victims based on an enhanced ability to evaluate the personality and emotional traits characteristic of vulnerability in others. Hence, the resemblance of the dark personality types leads people to believe that their undesirable nature is expressed in the same way by each personality type (Thorndike, 1920, cf. Paulhus, 2014). However, in reality, the dark personality types are socially aversive in a distinctive way (Hogan & Hogan, 1997; Kowalski, 2001). Researchers have put much effort towards differentiating and organizing an array of these personalities which are characterized by socially offensive traits falling in the normal range (Buckels et al., 2013; Paulhus & Williams, 2002). Paulhus (2014) found that individuals possessing the dark personality traits, rather than being incarcerated or under clinical supervision, manage to survive and get along (even flourish) in everyday work settings, scholastic settings and the broader community. Hence, the present study investigates the dark tetrad personality types' sexual behaviours in a non-forensic or clinical setting.

2.3.2 **Dark tetrad personality types and their aetiology**

2.3.2.1 **Narcissism**

The term narcissism was introduced by Raskin and Hall's (1979) in an attempt to develop a subclinical version of a narcissistic personality disorder measure. The traits that were retained to explain the clinical pattern/condition of narcissism include grandiosity, entitlement, dominance and superiority (Spain, Harms, & Lebreton, 2014). According to the DSM-5, a narcissistic personality type refers to a pervasive pattern of grandiosity (in fantasy or behaviour), need for admiration,

and lack of empathy beginning from early childhood. It is characterized by arrogance, a disposition for exploiting others and seeing them as means for achieving personal goals (Jonason, Webster, Schmitt, Li, & Crysel, 2012). Narcissists have tendencies to engage in self-enhancement (Raskin, Novacek, & Hogan, 1991) and can therefore appear charming or pleasant in short-term mating. Jonason et al. (2012) has linked narcissism with various forms of antisocial and amoral behaviours. In the long term, narcissists have difficulty maintaining successful interpersonal relationships, and lacking trust and care for others (Morf & Rhodewalt, 2001). However, other studies found that narcissism is associated with positive attitudes toward the self (Brown & Zeigler-Hill, 2004; Rauthmann & Kolar, 2013). Campbell, Rudich, and Sedikides (2002) explain that narcissists adopt positive attitudes toward the self with regard to agentic traits (e.g., intelligence, attractiveness) and less positive to communal traits (e.g., intimacy, caring). Henceforth, Campbell et al. (2006) argue that the agentic orientation of narcissism is linked to poor relationship functioning, such as low commitment and high levels of infidelity (Campbell, Foster, & Finkel, 2002).

2.3.2.2 **Psychopathy**

Hervey Cleckley (1976) pioneered the work on psychopathy and serious empirical work originated after Hare created his Psychopathy Checklist (cf. Hare, 1991). Both Hare (1999) and Cleckley (1976) note that individuals high in psychopathy engage in glib superficial charm, callous affect, erratic lifestyle and antisocial behaviour. In addition, they mentioned promiscuous sexuality as part of the characteristics of psychopathy. However, the DSM-5 define psychopathy as marked by a lack of anxiety or fear and bold interpersonal style that may mask maladaptive behaviours (e.g., fraudulence). High attention seeking and low withdrawal capture the social potency (assertive/dominant) component of psychopathy, whereas low anxiousness captures the stress immunity (emotional stability/resilience) component (American Psychiatric Association, 2013). Paulhus

and Williams (2002) explain that the central character elements of psychopathy include high impulsivity, thrill-seeking, low empathy and anxiety. Mealey (1995) adds that psychopaths have an exploitative nature with high levels of egocentrism, impulsivity and irresponsibility. Other studies reported low levels of empathy, shame and guilt (Larson & Buss, 2006, cf. Jonason et al., 2009). Hare (1998) suggested that the affective component of psychopathy, more specifically, the lack of empathy and remorse, is highly associated with abnormalities in the processing of emotional information, whereas the impulsive and irresponsible lifestyle component is highly associated with intellectual deficits and dysfunctional family backgrounds in forensic populations. Hence, psychopaths often fail to learn from punishment for misdeeds.

2.3.2.3 **Machiavellianism**

Machiavellianism is derived by Christie and Geis (1970) from Niccolò Machiavelli's writings. Christie and Geis (1970) defined Machiavellianism as a personality type characterized by manipulation and exploitation of others for self-benefit. They are much more goal oriented than person-oriented. Previous studies indicated that Machiavellianism is related to cynicism, distrust and exploitation of others (Christie & Geis, 1970; Vecchio & Sussman, 1991, cf. Brewer & Abell, 2014). Research has supported the notion that Machiavellians are inclined to use interpersonal strategies that advocate for self-interest, deception and manipulation (Jakobwitz & Egan, 2007). Jones and Paulhus (2009) confirm that Machiavellians are exceedingly willing to manipulate others and take pleasure in successfully deceiving others to achieve their goals. Another study found that Machiavellians place high priority on money, power and competition (Stewart & Stewart, 2006).

While society has deemed individuals with Machiavellianism to be socially manipulative, Machiavellians do not see themselves as being selfish or entitled-minded. Previous research demonstrates that Machiavellianism is associated with

the use of strategies intended to avoid or reduce relationship commitment (Jonason & Buss, 2012). Furnham et al. (2013) found that Machiavellian men and women are flexible and opportunistic and decisions to engage in short or long-term relationships are dependent on the specific rewards available.

2.3.2.4 **Sadism**

Sadism is a term introduced by Krafft-Ebing late in the 19th century and refers to recurrent, intense sexual pleasure derived from inflicting psychological or physical pain upon others (Chuang, 2011). The DSM-5 also defines sadism as persistent and intense sexual stimulation from physical or psychological suffering of another person, as manifested by fantasies, urges or behaviours. Buckels et al. (2013) indicate that sadism reflects an appetitive motivation for cruelty where hurting is craved for the sake of hurting alone. Another recent study states that sadism can be attributed to individuals who are cruel and vicious, who intentionally hurts and humiliates others in order to assert dominance or just for pure pleasure (O'Meara et al., 2011). Dominance is an effective method of causing interpersonal suffering, so sadists tend to engage in it. However, O'Meara et al. (2011) acknowledge that the aforementioned definition rests on a continuum upon which levels of sadism can range from been considered everyday sadism to pathological. Everyday sadism has been linked to sexual violence (Russell & King, 2016) and enjoyment of online trolling (Buckels et al., 2014). Some authors have argued that sadists possess an unimpaired cognitive empathy to be able to successfully hurt another (Baumeister & Campbell, 1999; O'Meara et al., 2011). On the other hand, Buckels et al. (2013) found a statistically negative relationship between sadism, and perspective-taking and empathic concern. Sadism is measured in conjunction with the dark triad because of affinity (Paulhus, 2014).

2.3.2.5 **Aetiology of the dark tetrad personality types**

Vernon et al. (2008) argued that individual differences on each of the so-called 'dark personalities' is entirely attributable to genetic factors. The same study showed that behavioural tendencies displayed by Machiavellians are to some extent learned in addition to genetic predisposition. Jones and Paulhus (2011a) interpreted the finding as evidence that Machiavellian personality is the most likely of the three dark personalities to result from environmental influence. Paulhus (2014) reasoned that the tendency to be environmentally influenced, for instance by peers or parents, leaves room for intervention against the undesirable behaviours. Meanwhile, the evolutionary perspective suggests some sort of reproductive advantage for the origins of dark personalities (Mealey, 1995). Jonason et al. (2008) suggests that dark personalities confer advantages in the context of a short-term mating strategy which is consistent with a fast life history. Jones and Weiser (2014) confirm that dark personalities use a fast life strategy to benefit in gene dissemination, which accounts for the origin of the dark personality types since they are genetically inherited.

The developmental psychopathology approach argues that the dark personality types' origins explains maladaptation as deviation from normative development. For example, narcissism may be the results of derailment of the outcome of normative self-development. During adolescence, narcissism characteristics may normatively because children typically become more egocentric and sensitive to others' evaluations of themselves. The developmental psychopathology approach further indicates that development is consequential to reciprocal processes playing itself out gradually; constitutional factors link with environmental factors to control the occurrence and development of dark traits. A recent study by Dotterer et al. (2017) followed youth from early childhood up to early adulthood, and identified developmental antecedents of three components of psychopathy which are

boldness, disinhibition, and meanness (Patrick, Fowles, & Krueger, 2009) in key developmental stages (i.e., preschool age, pre-adolescence and mid-adolescence).

2.3.3 **Gender difference amongst the dark tetrad personality types**

Previous studies have indicated that males have a tendency to score higher than females on measures of the dark tetrad personality types and sexual behaviours (Jonason et al., 2009; Jonason, Koenig, & Tost, 2010; Mealey, 1995). Although most of the studies documenting gender differences on the dark personality types and sexual behaviours have been done in Western contexts, they have to be confirmed in non-Western contexts (Jonason & Kavanagh, 2010; Lee & Ashton, 2005; Schmitt, 2005). It was for this reason that the current study sought to establish if males and females will score differently on dark tetrad personality types and sexual behaviours measures in an African context. This also applies to how the construct of the dark tetrad personality types will interact with sexual behaviours.

Apart from the undesirable nature of dark tetrad personality types, cultural beliefs and convictions about gender roles might influence the participants' scores. Wallace (2007) notes that socialization factors do influence individuals perform their sex roles in romantic relationships to conform to their cultural norms and expectations. To support the aforementioned findings, Hooks (2004) writes that in African culture, sexuality is regulated according to male and female role expectations. For example, females are expected to be sexually submissive compared to their male counterparts. African males internalize the idea that manhood is about an outward, often sexualized, exhibition of status and wealth. Therefore, these internalized sex roles shape individuals' behaviours, interactions, and how they perform in relationships (Wallace; 2007).

Jonason, Li, and Czarna (2013) found that in Western and Eastern samples males were positively, significantly associated with all dark personality types and sexual behaviours. A recent study uncovered that males desired more sex partners and were more willing to have sex with strangers (Schmitt, 2005). Consistent with the aforementioned findings, Chabrol et al. (2009) found that the mean score for dark tetrad personality types was higher among males than females on the patterns of delinquent behaviours. The findings are consistent with those of previous studies (Andrew, Cooke, & Muncer, 2008; Essau, Sasawaga, & Frick, 2006). Buckels et al. (2013), however, demonstrates that there was no gender difference on the dark personality types and aggression. Jonason et al. (2009) and Jonason and Webster (2010) identified gender differences on the dark personality types' sexual behaviours in non-clinical samples. The findings revealed that men scored significantly higher than women, particularly on psychopathy.

With regard to gender differences and sexual activities, researchers such as Buss and Schmitt (1993) and Jonason et al. (2009), analysed results of men and women separately in their studies. The rationale for the analyses was informed by the pervasive fact that gender differences persist in mating behaviours. Men scored higher than women in both dark personality and socio-sexuality measures (Buss & Schmitt, 1993; Jonason, Koenig, & Tost, 2010). For example, McHoskey (2001) discovered that Machiavellian males scored higher on promiscuous and sexual aggressive behaviour. A study conducted by Foster, Shrira, and Campbell (2006) noted that males high on narcissism were linked with unrestricted socio-sexual behaviour and high levels of infidelity. Jones and Paulhus (2010) reported that males scored higher than females on all dark personality types' measures.

Schmitt (2005) argues that men's interest in sexual behaviours is the most prevalent compared to their female counterparts and the strongest gender difference in the mating context. Jonason et al. (2009) indicates that men's pursuit of sexual activities is more advantageous for them than females as it provides

reproductive benefits. Jonason et al. further stated that women are biologically required to undertake pregnancy and nursing, as such they may be more restricted than men in their sexual adventures. Other researchers found that males engaged in sex at earlier ages than their female counterparts, a factor accounting for the gender differences in issues of mating (Elo, King, & Furstenberg, 1999; Kenrick, Keefe, Gabrielidis, & Cornelius, 1996).

Males over-report on their sexual experience because of their attitude towards sex which includes their intra-competition or social status (Jonason, 2008). Henrich and Gil-White (2001) reported that being sexually unrestricted, a male may gain prestige among other males because he advertises an ability to gain sexual access to a rare commodity. The rare commodity being females since they are selective in mating and tend to have greater power to dictate terms of sexual relationships (Baumeister, 2000). Consequently, males compete with one another over females for sexual access (Baumeister & Vohs, 2004).

McHoskey (1995) in his study claims that those higher social status or in possession of valued resources can easily manipulate and exploit those of lower rank if engagement in sexual activity is aimed at enhancing social status or obtain resources. Endorsement of social status as a motivation for sexual behaviour has been associated with the dark personality types (Paulhus & Williams, 2002). For example, narcissistic individuals display greater concern for visibility and status (Greenwood, Long, & Cin, 2013). Additionally, the use of sexual behaviour to improve self-esteem has been recently reported for Machiavellianism (McCain, Jonason, Foster, & Campbell, 2015), which, perhaps indicates a general motivation to enhance this trait.

To assert the abovementioned findings, evolutionary theorists reasoned that parental investment explain the pressures of the sexual selection that shaped gender differences in the mating context (Geary, 2000; Kenrick & Keefe, 1992).

Women, as the sex that invested more in offspring, became selective about potential mates than men. As a result, ancestral men across societies competed with other men to attract women, and men's evolved dispositions came to favour aggression, competition over the acquisition of resources, and risk-taking (Mealey, 2000). Ancestral women developed a tendency to choose mates who could provide resources to support them and their children.

A cross-cultural research demonstrates that women's reliance on men is reflected in men devoting greater effort to the activities that produce a society's subsistence, although the specific activities that are relevant to subsistence will vary across societies (Wood & Eagly, 2002). For example, Geary (1996) asserts that competition between men would emerge in relation to those skills and resources that define success within the wider culture. Geary further writes that men's desire to be certain about paternity and to acquire defensible resources emerged in an overall cross-cultural tendency for them to control women's sexuality. Pe´russe (1993) argues that men's social status, which he interprets as reflecting an evolved disposition toward dominance emerged from sexual selection pressures. In summary, Eagly and Wood (1999) indicate that most of the gender-differentiated behaviour that occurs in contemporary societies emerges from these evolved psychological dispositions that are "remains" of the selection pressures that shaped the human species in the evolutionary past.

Given the aforementioned findings of gender differences on the dark personality types and sexual behaviours, it is expected that gender will moderate the relationship. Previous studies indicate that dark personality type's men are associated with unrestricted sexual behaviours (McHoskey, 2001; Paulhus & Williams, 2002). Crysel, Crosie, and Webster (2013) agree that men high in dark personality types prefer short-term mating in order to exploit others or maintain an agentic social style. Reise and Wright (1996) found that men high in psychopathy are correlated with an unrestricted pattern of sexual behaviour. Interestingly,

Jonason, Valentine, Li, and Harbeson (2011) found that narcissistic men were associated with long-term mates who have social status. Jonason et al. (2013) defined social status as a possession of valued resources such as wealth, reproductive benefits and ambition. Jonason et al. (2013) further argued that the benefits of social status are likely to provide important tangible qualities (e.g., housing, traveling) but those rewards are not immediately extractible. A sexual selection explanation suggests dark personality type's men possess confidence, low-agreeableness and fearlessness which women find attractive in the mating context (Carter, Campbell, & Muncer, 2014).

In support of the aforementioned findings, Lippa (2010) notes that in the realm of personality, males with high levels of aggressiveness, risk-taking and status-seeking, presumably, evolved as sexually-selected traits that fostered male dominance and helped ancestral men attract mates. Equally, females with high levels of nurturance, tender-mindedness, and being people orientated evolved as sexually-selected traits that fostered women's success at rearing children (Lippa, 2010). Rowe (1995) found that males high on the dark personality types engage in sexually-risky behaviour because of the reproductive consequences and have more illegitimate children. A previous study has also shown that masculine males are preferred by females when environmental conditions favour good genes for the offspring and competition for resources (Quist, Watkins, Smith, Little, DeBruine, & Jones, 2012).

2.3.4 **Overlap of the dark tetrad personality types**

The 'dark personality' construct has evoked interest in personality research. According to Furnham et al. (2013), the main reason the dark personality members were studied concurrently was because of the apparent discrepancy between their distinctive theoretical origins and empirical findings that suggests overlap. Buckels et al. (2013) argue that the dark tetrad personality type construct highlights

associations between subclinical psychopathy, Machiavellianism, narcissism and sadism. The construct reflects the view that the four subclinical categories have at least similar underlying factors and some researchers viewed them as indistinguishable in normal samples (Jonason et al., 2008; McHoskey, Worzel, & Szyarto, 1998)(cf. Paulhus, 2014). As a result, researchers have constructed measures that combine them into a global dark personality index (Jonason et al., 2010; Jones & Paulhus, 2011a).

Furnham et al. (2013) point out that the empirical evidence of the dark personality types overlapping was derived from two types of data, namely: (i) factor analytic studies where dark personalities were loaded on the same factor, for example, the HEXACO model, and the five-factor model (Furnham & Crump, 2005; Furnham & Trickey, 2011; Hogan & Hogan, 1997) and; (ii) numerous self-reports, observer reports, and behavioural measures (Khoo & Burch, 2008; Moscoso & Salgado, 2004). In support of the aforementioned findings, Lee and Ashton (2005) found that all the dark personality types overlap on exploitation, manipulation and self-importance dimensions. Jones and Paulhus (2011a) concluded that the dark personality members share Quadrant II, that is, high agency and low communion. According to Rauthmann and Kolar (2013), high agency refers to becoming individuated with no regard for others which is characterized by hostilility, cynicism, greediness, and arrogance. While low communion refers to less focus on others or becoming connected. Jones and Paulhus (2011a) adds that low communion entails the intrinsic motivation to exploit others. Consistent with the previous findings, the composite of dark personality types was significantly related to numerous sex partners, mate poaching and preference for an unrestricted, short-term mating style (Jonason et al., 2009).

In addition, Paulhus and Williams (2002) point out that the dark personalities had unique correlates with different outcomes despite the common positive correlations among them. For example, each personality had a unique pattern of

correlations with the Big Five personality traits, intelligence and self-enhancement. Pailing, Boon, and Egan (2014), for example, found that disagreeableness is at the core of antagonistic behaviour stemming from the dark personality types. This was consistent with Jakobwitz and Egan's (2006) study which showed that the dark personality types were negatively correlated with the Big Five personality factor labelled agreeableness, thus replicating previous research (Vernon et al., 2008). In contrast, Jones and Paulhus (2010) found that it is callousness that leads the dark personality types to overlap. Empirical research supports this idea, finding that a lack of empathy is a common element among the dark personality types (Wai & Tiliopoulos, 2012).

Paulhus (2014) notes that each of the dark personality types has unique features. However, the common feature of callousness plays out rather differently in the four characters. In their quest for public admiration, narcissists lack empathy for those they step on, while the strategic Machiavellian demonstrates a caring approach while taking advantage. By contrast, the impulsive nature of psychopaths tend to lead them to grab what they want, with little care for others. Finally, sadists seek out opportunities to observe or even induce suffering in other people. The common feature of callousness amongst the dark personality types leads to a wide array of interpersonal offences without the consequences of shame or guilt (Paulhus, 2014).

All dark personality types tend to use humour as a tactic in interpersonal relationships (Veselka, Schermer, Martin, & Vernon, 2010). However, this plays out differently amongst them, for example Machiavellians, sadists and psychopaths prefer aggressive humour styles whereas narcissists prefer affiliative humour (Martin, Lastuk, Jeffrey, Vernon, & Veselka, 2012; Veselka et al., 2010). Given the aforementioned findings, it is not surprising that Machiavellians, psychopaths, and sadists are known as bullies (Baughman, Dearing, Giammarco, & Vernon, 2012; van Geel et al., 2017) as they seek to dominate in an interpersonal

context (Jones & Paulhus, 2011a), and act on their deviant fantasies, whether they be sexual or revenge fantasies (Williams, Cooper, Howell, Yuille, & Paulhus, 2009).

Additionally, Jonason, Slomski, and Partyka (2012) found that in the occupational context, manipulation amongst the dark personality types plays out differently, for example, narcissists tend to use soft manipulation tactics, psychopaths use hard tactics and Machiavellians are the most flexible, they usually use both soft and hard tactics. Forcefulness is an element that differentiate the two types of tactics. Soft tactics are designed to convince the target that it is in their best interest to engage in the advocated behaviour, while, in hard tactics the user forces their will on another person (Jonason et al., 2012). For example, soft tactics such as ingratiation, exchange of a favour, alliances and offering compliments; and hard tactics such as assertiveness, direct manipulations and threat of appeal or punishment may be employed by various dark personality types in pursuit of their goal.

Lee and Ashton (2005) found that the absence of honesty/humility was the common feature among all dark personality types. Moreover, social dominance was found to be the core element of the dark personality cluster (Pratto, Sidanius, Stallworth, & Malle, 1994). Jones and Figueredo (2013) discovered that the association of antagonistic personality clusters stems from the negative impact social dominance has on others. They further found that disagreeableness, manipulation and callousness were the core of the dark personality factor. In a study conducted by Jonason and Webster (2010), the dark personality types showed overlaps in short-term mating and callousness. Jonason and Kavanagh (2010) provided a comprehensive analyses of mating styles by differentiating sexual, manipulative, practical, enduring, selfless and love-struck individuals. They indicate that each dark personality member approaches reproduction in a distinct fashion which centers on the preference for short-term versus long-term perspective.

However, short-term mating was facilitated by other factors rather than sheer exploitation. For instance, impulsivity (Hare, 1996) amplified the short-term focus. The evidence includes studies linking dark personality types to sexual aggressive behaviour (Lalumiere & Quinsey, 1996), coercion (Williams et al., 2009), and promiscuity (Vernon et al., 2007). Jonason et al. (2009) found that individuals high in the dark personality traits are likely to use any means necessary to get what they want and are linked with permissive sexuality. For example, with respect to sex, psychopathy and narcissism are personality types that are primarily associated with promiscuous sexual behaviour (Reise & Wright, 1996), while Machiavellians are inclined to pursue long-term relationships (Jones & Paulhus, 2011b) and appear more interested in instrumental (e.g., monetary) gain when they are in short-term relationships (Jones & Paulhus, 2009). As a result, they benefit from a more strategic and regulated mating style that maintains the relationship. On the other hand, psychopaths use Impulsive and aggressive mating strategy to increase their mating possibilities .

Despite the dark personality types' common traits, Jones and Figueredo (2013) indicated that it is their behavioural, attitudinal, and belief-related components that make them unique. For example, a Machiavellian is a dark personality with a strategic style (Jones & Paulhus, 2009); a narcissist has an egotistical style (Morf & Rhodewalt, 2001), a psychopath has an impulsive and antisocial style (Williams, Paulhus, & Hare, 2007), and a sadist has a behavioural style of hurting others (Book et al., 2016). The findings were done using Western samples. Hence, the current study sought to investigate the concept of dark personalities in an African context to observe how uniquely each of the personality types will relate with different features of sexual behaviours.

2.3.5 **The dark tetrad personality types and socio-sexual orientation**

Simpson and Gangestad (1991) described socio-sexual orientation, or socio-sexuality, as individual difference in willingness to engage in uncommitted sexual relations. They further indicated that individuals who are unrestrictive in socio-sexual behaviour are more willing to participate in casual sex and feel comfortable with engaging in sex without love and emotional closeness. Several personality traits and individual difference dimensions also co-vary with a variety of socio-sexual attitudes and behaviours. For instance, individuals who score high on a measure of extraversion, disinhibition, and self-monitoring tend to possess more permissive attitudes about uncommitted sex, and are more inclined to engage in unrestricted forms of sexual behaviour compared to individuals who score low on these dimensions (Simpson & Gangetsad, 1991). Jonason et al. (2011) indicated that some of the differences underlying socio-sexual attitudes and behaviours can be accounted for by gender differences. Men, relative to women, tend to possess more permissive attitudes and to exhibit more unrestricted behaviour with regard to engaging in uncommitted sexual relations.

Ellison (2001)(cf. Edelstein, Chopik, Emily, & Kean, 2011) found that in the initiation and establishment of sexual relationships, testosterone played an essential role. Several researchers found that single individuals compared to those who are in committed, monogamous relationships tend to have higher levels of testosterone (Booth & Dabbs, 1993; Burnham, Chapman, Gray, McIntyre, Lipson, & Ellison, 2003; van Anders & Goldey, 2010). The aforementioned findings appeared to be more robust among men, although there is contradicting evidence that single women have higher testosterone compared to those who are committed in monogamous relationships (Kuzawa, Gettler, Huang, & McDade, 2010; van Anders & Watson, 2007). Moreover, a longitudinal study showed that men's testosterone levels increase prior to divorce and decrease with remarriage (Mazur & Michalek, 1998), suggesting that testosterone encourages mating effort or an

individual's effort towards unrestricted sexual behaviours. Other researchers suggest that despite relationship status, differences in testosterone may be associated with an individual's orientation toward relationships or their propensity to have sex outside of a relationship with one primary partner (van Anders & Goldey, 2010; van Anders, Hamilton, & Watson, 2007). For instance, men with multiple partners have higher testosterone than men with one partner and, in some cases, than single men (Alvergne, Faurie, & Raymond, 2009; Gray, Ellison, & Campbell, 2007).

Additionally, subsequent research demonstrated that individual differences in socio-sexuality have important implications for relationship outcomes (Webster, & Bryan, 2007). For example, men and women with an unrestricted socio-sexual orientation engage in sexual activity quickly and are more likely to be unfaithful in romantic relationships, and invest less in those relationships compared to those with a more restricted socio-sexual orientation (Simpson, Wilson, & Winterheld, 2004). Edelstein et al. (2011) findings reveal important gender differences in the various components of socio-sexuality. For example, males reported considerably higher levels of unrestricted socio-sexual desire and behaviour compared to their female counterparts. These findings indicated that male's desire for uncommitted sexual activity exceeds their tendency or ability to engage in it, most likely because women are less inclined towards casual sex.

Thus, for men, the motivation to have uncommitted sex is closely related to their testosterone levels (Gray et al., 2007). Consistently, Penke and Asendorpf's (2008) found that men's socio-sexual desire scores uniquely predicted their flirting behaviour with a female confederate. There is evidence that the socio-sexual desire and behaviour components are less closely associated with women than men (Baumeister, 2000). That is, women may be less likely to act on their sexual desires and/or more likely to engage in sexual behaviour that is inconsistent with their desires. Baumeister further argues that sexual desire should be less stable

over time for women than for men. Similar results were obtained by Buss and Schmitt (1993) and they indicated that these findings suggest that men's tendency or ability to engage in uncommitted sexual activity may be limited by women's less inclination to do so. Given these restrictions, men's motivation to engage in casual sex may be more closely tied to their levels of socio-sexual desire than to their actual socio-sexual behaviour. Women's socio-sexual behaviour, in contrast, should be less constrained than men's, by the availability of willing sexual partners, so their motivation to engage in casual sex may be more closely tied to their actual socio-sexual behaviour than to their levels of socio-sexual desire. Women reporting unrestricted socio-sexual orientations however may be perceived as more attractive by men (Boothroyd, Cross, Gray, Coombes, & Gregson-Curtis, 2011), which could increase women's likelihood of uncommitted sexual behaviour.

From the personality perspective, personality influences many aspects of sexual activity (Fink, Brewer, Fehl, & Neave, 2007), including the motivation to engage in sexual behaviour. Previous researchers indicated that individuals with dark personality types engage in sexual activities with a specific motive (Goncalves, & Campbell, 2014; Veselka, Giammarco, & Vernon, 2014). According to Meston and Buss (2007), there are a range of reasons for engaging in sexual behaviours such as physical reasons, goal attainment, emotional reasons and insecurity. Meston and Buss (2007) indicated that physical reasons include stress reduction, pleasure, physical desirability and experience seeking; and goal attainment includes resources, social status, revenge and utilitarian reasons. While emotional motivations include love, commitment and expression; and insecurity includes boosting self-esteem, pressure and mate guarding. The exploitative, opportunistic nature of dark personality types (Jones & Paulhus, 2009) in which other people are viewed as means to an end, suggests that males and females may be most motivated by individual reward.

Several researchers found that individuals with the dark personality traits have less restrictive socio-sexuality (Foster et al., 2006; McHoskey, 2001). The dark personality types are considered toxic and antagonistic as they share an exploitative behavioural style for self-beneficial goals at the expense of, or at least without regard for communal welfare and others (Jones & Paulhus, 2010). Jonason, Lyons, Bethell and Ross (2013) indicated that the manipulative behaviour and dishonesty of the dark personality types seem to facilitate short-term sexual approaches through mechanisms such as insincere commitment, feigned mate value and other forms of sexual deception (Jonason & Buss, 2012; Seto, Khattar, Lalumiere, & Quinsey, 1997; Tooke & Camire, 1991). Consistent with their short-term exploitative relationships, dark personality individuals are knowledgeable about a number of different tactics to manipulate and exploit others. For example, Jonason and Webster (2012) found that individuals who have a characteristic of the dark personality types are selfish, competitive and strategic in their active strategies for manipulation. Specifically, they use social influence to manipulate and exploit others, and are believed to have a number of unique exploitative tactics at their disposal. Consistent with this, Lee and Ashton (2005) found that individuals high on the dark personality types tend to use strategies such as manipulation and exploitation to remain in a position of power and dominance, which is used for personal gain. These selfish and exploitative tendencies have recently been found to play an important role in romantic relationship contexts, with individuals adopting more self-interested mating strategies, such as a preference for sexual exploitative relationships (Jonason et al., 2009).

Furthermore, Jonason et al. (2009) examined the mating strategies associated with each of the dark personality types and argue that they are linked by their exploitative sexual style, which is associated with a Faster Life History Strategy (Jonason et al., 2010). For example, several researchers found that dark personality types are correlated with low agreeableness (Bradlee & Emmons,

1992; Paulhus, 2001; Paulhus & Williams, 2002), which is associated with conflict in long-term relationships (Buss, 1991) and marital dissatisfaction (Buss, & Shackelford, 1997). Furthermore, a number of studies have indicated that the dark triad personality traits mostly prefer short-term mating styles and show less interest in long-term romantic relationships (Jones & Paulhus, 2010; Lee & Ashton, 2005; Paulhus & Williams, 2002). This might be as a result of sharing common traits such as low disagreeableness, lack of empathy and callousness, which predispose individuals with the dark personality types to facilitate selfish ends and sexual exploitation in a mating context.

2.3.6 **The dark tetrad personality types and infidelity**

According to Saxe (1991), infidelity poses challenges to the steadiness of a romantic relationship; however, males and females continue to report additional relations of sexual nature during their current or primary relationship (Mark, Janssen, & Milhausen, 2011). Continuous sexual infidelity implicates an intense reproductive drive (Simpson & Belsky, 2008) and some people may seem to have the propensity to be unfaithful regardless of how satisfying their relationship may be (Gambescia, Jenkins, & Weeks, 2003). Moultrup (1990) explains that this may be due to repetition of family infidelity patterns which occur when a child witnesses and exhibits them later in adulthood. Schmitt (2004) discovered that the personality factors relating to infidelity include callousness, antisocial dispositions and lack of empathy.

Given the callousness and manipulative tendencies, researchers interestingly found that the dark personality types have each been associated with infidelity or at least the intention to be unfaithful (Brewer, Hunt, James, & Abell, 2015; Buss & Shackelford, 1997; McHoskey, 2001). Callousness was related to short-term sexual encounters because individuals disregard hurting others or establishing lasting bonds (Jonason et al., 2013). Manipulativeness and dishonesty, however,

were related with short-term sexual approaches through strategies such as feigned commitment, mate value and other forms of sexual deception (Jonason & Buss, 2012; Tooke & Camire, 1991). In addition to the common core of the dark personality types, impulsivity (Jones & Paulhus, 2011b) was found to be a determinant of infidelity, as is narcissistic entitlement (Jones & Weiser, 2014). Evolutionary psychologists argue that this category of unfaithfulness is often connected to a hedge-betting strategy, the objective being to profile a diverse genetics of one's offspring (Belsky, Steinberg, & Draper, 1991).

Regardless of the dark personality types' common traits of manipulation, impulsivity and callousness, each has distinctive features (Furnham et al., 2013). For example, McHoskey (2001) found that Machiavellian individuals are prone to infidelity but use caution in how they manage relationships. In sum, Machiavellian people will control partners and interlopers in a way that is of uttermost advantage to their selfish interest. Jones and Paulhus (2011a) add that Machiavellian individuals do not destroy their relationships as a result of the infidelity. They usually delay their gratification, carefully devise alibis, and conceal their behaviours in such a manner that their unfaithfulness is virtually impossible to detect. Jones and Weiser (2014) further argued that Machiavellians are manipulative and may be able to ‘‘confess,’’ ‘‘act contrite,’’ or ‘‘show guilt’’ in ways that convincingly repair their primary relationship after infidelity. Brewer et al. (2015) argue that in relationships where one partner feels a sense of remorse and constantly attempts to obtain the other partner's forgiveness, it present considerable opportunities for exploitation. This situation may be alluring for partners with high levels of Machiavellianism that exploit the trust of others for personal gain. In line with this, Jones and Weiser (2014) found that Machiavellianism was associated with infidelity among women only. They further argue that the reason Machiavellianism was associated with infidelity among women may be due to them believing they can engage in infidelity behaviours with fewer negative consequences.

Contrary to previous studies, Adams, Luévano and Jonason (2012) found that there was no link between narcissism and infidelity, particularly among women. Jones and Weiser (2014) argue that this observation may result from the relationship choices that narcissistic women make, the reason being that they only get involved with extremely high quality partners, and infidelity may not bring the gratification that they require. In support of the aforementioned statement, Wiederman (1997) note that, generally, both men and women view infidelity negatively, but narcissistic individuals may not see this negativity unless an extra-dyadic partner brings sufficient ego rewards.

Reidy, Zeichner and Martinez (2008) point out that psychopathic individuals are more aggressive, and cheat impulsively (Jones, 2013; Williams, Nathanson, & Paulhus, 2010). Hence, psychopathic people are indiscriminately unfaithful, selfish and uncaring. Mealey (1995) notes that the one justification for a strong relationship between psychopathy and infidelity (in both men and women) is due to the fact that psychopathy is an inherent reproductive strategy. Psychopathic individuals may pursue sex regardless of the consequences, relationship context, or outcome. Thus, psychopathic personality type uses a strategy that is closely linked with a Fast Life History and benefits men in gene dissemination (Jonason et al., 2010).

From a theoretical perspective, the dark personality types engage in infidelity for different reasons. For example, narcissists are controlled by egotistical needs, Machiavellians by long-term agendas, psychopaths by impulsive thrill-seeking (Jones & Paulhus, 2009) and sadists by pleasure (Greitemeyer, 2015). Jones and Weiser (2014) adds that men and women with high levels of Machiavellianism are prone to sexual behaviour for physical reasons, goal attainment and insecurity. In particular, Machiavellian men and women condoned stress reduction, experience seeking, resources, social status, revenge, utilitarian benefits, boosting self-

esteem, duty/pressure, and mate guarding as motivations for sexual behaviour. These findings suggest that Machiavellianism directly impact on willingness to engage in sexual behaviour for specific rewards. Tsapelas, Aron and Orbuch (2009) found that unfaithful partners initiate relationships in order to enhance their self and increase self-efficacy. By including others in the 'selves', individuals experience their partner's resources, outlooks and identities as their own. This self-expansion begins as new partner commences in intensive self-disclosure, spending extended periods of time together and thinking obsessively about each other. Subsequently, there is rapid self-expansion, linked to feelings of pleasure and excitement. Platt, Nalbone, Casanova and Wetchler (2008) suggest that unequal power in the primary relationship is closely related to infidelity. Men and women who regard themselves as socially desirable in comparison to their partners had more extramarital affairs and engaged in sexual infidelity more frequently.

From the Big Five, infidelity has been associated with low agreeableness, conscientiousness (Barta & Kiene, 2005; Jonason et al., 2011; Schmitt & Buss, 2001) and with higher neuroticism, or lack of positive psychological adjustment (Whisman, Gordon, & Chatav, 2007). Similarly, the dark personality types have been associated with these traits. Several researchers found that individuals accused of infidelity are more prone to new experiences, show traits of extroversion more than their partners and are more susceptible to boredom (Orzeck & Lung, 2005; Wiederman & Hurd, 1999). Additionally, in situations where individuals have partners with low agreeableness or conscientiousness, they are also more likely to engage in extramarital activities (Shackelford, Besser, & Goetz, 2008). Other researchers found that when both partners in relationships have a similar degree of agreeableness, conscientiousness, neuroticism and openness to new experiences, they are more likely to be faithful (Drigotas, Safstrom, & Gentilia, 1999; Orzeck & Lung, 2005).

Based on the available literature, low conscientiousness, disagreeableness and extraversion were strongly associated with infidelity compared to the “other traits” in the Big Five, and these associations were found in diverse cultures (Jonason et al., 2009; Pals & McAdams, 2006; Tan, Hwong, & Lee, 2016). Researchers have also shown gender differences on the dark personality types and infidelity (Adams et al., 2012; Jones & Weiser, 2014). Allen and Baucom (2004) indicate that dissatisfaction in romantic relationships develops differently for men and women.

A large body of research indicates that there is a strong desire in males to engage in extramarital activities (Prins, Buunk, & van Yperen, 1993), and are more likely to act on their desires (Allen & Baucom, 2004), have multiple sexual partners, inclusive of short or long-term affairs and one-night stands (Brand, Markey, Mills, & Hodges, 2007). Women, on the contrary, demonstrate greater emotional connection with their extra-dyadic partners (Bradbury, Fincham, & Beach, 2000), confess to more intimacy and self-esteem motivations for lack of fidelity, are more likely to admit that the behaviour is against their nature, and show concern about the negative judgments from others when they are unfaithful in relationships (Brand et al., 2007).For women, the strength and number of affairs are related directly to the level of dissatisfaction with the primary relationship, whereas with men the urge to engage in infidelity is less correlated to the state of their primary partnerships (Prins et al., 1993). Women become emotionally affected and distressed about their own infidelities, however, they feel justified because of their marital dissatisfaction (van den Eijnden, Buunk, & Bosveld, 2000).

2.3.7 **The dark tetrad personality types and sexual aggression**

Theories of aggression generally attribute a large role to emotions and emotion regulation (Knight & Prentky, 1990), however, forms of aggression are typically differentiated based upon their antecedents and motivating factors (Berkowitz, 1993)(cf.Quanty, 1994). The Confluence Model indicates that sexual aggression

is the outcome of the correlation or confluence of two developmental pathways referred to as ‘‘Hostile Masculinity’’ (HM) and ‘‘Impersonal Sex’’ (IS) (Malamuth, Linz, Heavey, Barnes, & Acker, 1995). The model’s logic about the HM pathway reveals that parent-child interactions which are characterized by hostile, chaotic or abusive family environments encourage the development of adversarial or hostile schemata related to male-female relationships (Malamuth et al., 1995). In support of this, Bowlby (1979)(cf. Mack, Hackney, & Pyle, 2011) asserted that early disruptions in the development of a healthy child-parent interactions lead to emotionally detached, cold and hostile individuals. The domineering and hostile orientation characterizing the HM construct are linked to aggressive sexual attitudes, beliefs and behaviours (Malamuth et al., 1995; Dean & Malamuth, 1997; Malamuth & Thornhill, 1994). Furthermore, Marshall, Hudson, Jones and Fernandez (1995) suggest that sexual aggressors lack empathy which is considered an important element of controlling sexual offending behaviour.

The dark tetrad personality types have been linked with emotional deficit traits characterized by shallow affect, manipulation, egocentrism and lack of empathy, all of which show lack of ability to maintain long term relationships. The callous-unemotional and opportunistic nature of dark personality types (Schmitt, 2004) has been associated with sexual aggression (Kosson, Kelly, & White, 1997). In line with this, available literature confirm that individuals who show impulsivity, behavioural aggression, and callousness are inclined to employ manipulation and physical force to obtain sex (Dreznick, Cronin, Waterman, & Glasheen, 2003; Seto et al., 1997). Alternatively, individuals with a greater sense of self-importance and superficial attractiveness prefer sexual seduction (McHoskey, 2001); and the dark tetrad personality types have been linked with these behaviours.

Furthermore, the Confluence Model on the IS pathway suggests that individual’s development of prosocial negotiation skills may be compromised impaired by family and peer influences. Individuals suffering from such interpersonal deficits

may become less adept at initiating and sustaining intimacy with others, particularly in their sexual relationships. The IS construct is, thus, demonstrated as manipulative, non-committal, game-playing attitude towards sexual relations. Individuals high in impersonal sex develop a ‘‘sexual conquest’’ viewpoint about their sexual relations, coupling their sexuality with their peers’ status and their own feelings of self-worth (Kanin, 1984). Malamuth et al. (1995) suggests that this construct is not equated with heightened sex drive or promiscuity, rather it represents a peculiar orientation to sex, specifically, an impersonal orientation in contrast to a more personal, intimate sex that brings satisfaction from coercive sex.

Malamuth and others note that the IS construct is linked to sexual aggressive behaviour (Malamuth et al., 1995; Sarwer, Kalichman, Johnson, Early, & Ali, 1993). In line with this, the extant literature has robustly indicated that the dark personality types prefer short-term mating in sexual relationships (Jones & Paulhus, 2010; Lee & Ashton, 2005; Paulhus & William, 2002). Jonason et al. (2012) indicated that the dark personality types’ limited empathy is related to the antagonistic approach to life and enables them to pursue selfish, competitive and aggressive strategies to social and sexual relationships.

Additionally, Baumeister, Catanese, and Wallace (2002) found that ego-threat amongst the dark personality types has been linked to sexual aggression both theoretically and empirically. For example, Bushman, Bonacci, van Dijk, and Baumeister (2003) conducted laboratory research and showed that individuals high in narcissism, who are deprived of sexual experience, would become aggressive towards an unwilling partner. In line with this, Mouilso and Calhoun (2012) report that narcissists men due to their sense of entitlement engage in aggressive sexual activities when they have invested in a partner. They also believe that they are attractive enough to eventually convince a partner to engage in sex (Holtzman, Vazire, & Mehl, 2010). The narcissistic individuals are more

inclined to sexual aggression as an immediate response to sexual rejection because of their inflated sense of self-worth (Jones & Olderbak, 2014).

In contrast to narcissists, psychopaths merely seize upon sexual opportunities should they arise at all, and use more antisocial tactics to obtain sexual intercourse (Camilleri, Quinsey, & Tapscott, 2009; Lalumiere & Quinsey, 1996). They are likely to favour sexual aggression because of their poor impulse control (Jones & Olderbak, 2014). On the other hand, Machiavellians are not categorized as risk-takers or impulsive (Jones & Paulhus, 2009, 2011b). These individuals are rather more focused on instrumental benefits. The dark personality types have been found to have a substantial predictive power over many antisocial behaviours, including aggression (Jones & Paulhus, 2010) and acts of revenge (Williams et al., 2010). Sexual aggression has been defined as persuading another person to engage in sexual activities through threats, deception, or physical violence (Carr & VanDeusen, 2004; Shackelford & Goetz, 2004), and has been linked with short-term mating. These behaviours are widespread, although women are more likely to report being the victims of sexual coercion (Koenig et al., 2004).

Admittedly, a bulk of research on dark personality types and sexual aggression was done using samples of criminals (Hare, 1998). In spite of that, a study found that individuals in a non-forensic sample scored high on dark personality types, displaying similar levels of antisocial behaviour as those in a forensic sample (Belmore & Quinsey, 1994). The non-forensic sample was linked to similar levels of underlying affective and interpersonal deficits but the expression of these was moderated by external factors such as intelligence or socio-economic status. Porter and Woodworth (2006) found that intelligence moderated the dark personality type's expression of aggression which was harmful although not criminal. Therefore, it was important to investigate the dark tetrad personality types and sexual aggression in a student population to shed more light on the phenomenon.

2.3.8 **The dark tetrad personality types and ASB**

Burt (1980) termed the belief that all sexual relationships are fundamentally exploitative as ‘adversarial sexual beliefs’ (ASB). Burt reported that heterosexual partners involved in an exploitative sexual relationship will be cunning, cheating, manipulative, opaque towards one another, and lack the basic principle of trust. The notion of ASB alludes that women are cunning, manipulative and believe that men are only after sex. Russell, Doan, and King (2017) expressed a similar view that ASB represents the belief that interpersonal relationships are aggressive and exploitative in nature. They insist that the notion that interpersonal relationships are adversarial is because of the rape supportive and patriarchal culture. Thus, rape myth acceptance and sexual dominance represent ASB (Russell et al., 2017). Russell et al. further argue that sexual dominance represent sexual instincts affiliated to power and control.

Boufferd (2010) believes that viewing interpersonal relationships as combative likely affects honest interaction between sex partners and disinhibits sexually violent behaviours. The concept of ASB proposes that individuals who accept these beliefs are more likely to excuse or rationalize sexual exploitation and has been associated with the notion that women are all innately ill-willed (Peterson & Muehlenhard, 2007). Women are seen as cunning, coercive beings, who lead some males to the conclusion that women will do anything for self-advancement and are, hence not trustworthy. Holding this negative view towards women justifies and legitimizes violence against them and thus, perpetuate sexual exploitation (Allen, Emmers, Gebbardt, & Giery, 1995). Existing literature suggests that ASB is linked to male and female sexual aggression (Duncan, 2010).

Anderson (1998) found that college women who held adversarial beliefs about relationships were likely to engage in sexually aggressive behaviour. Similar results were found by Hines (2007) in a multinational analysis of adversarial beliefs

amongst college students for both males and females. Additionally, existing literature asserts that adversarial beliefs, whether held by males or females appear to contribute to a high level of hostility and sexual aggression (Hines & Saudino, 2003). Additional studies have also reported a positive association between adversarial beliefs and aggression from men during sexual encounters (Burt, 1980; Murrel & Dietz- Uhler, 1993). Anderson (1998) pointed out that adversarial beliefs about sexual relationships have been used as a sort of moral justification for sexual exploitation or manipulation. In support of this, Duncan (2010) argued that there was a group of females who engage in sexual aggression, who have internalized stereotypes about sexual behaviour, adhered to the myth of male sexual invulnerability, and held adversarial beliefs about men. Duncan further stated that the stereotype and myth behaviour carried by this group of females is that males do not refuse sexual advances from females because they are constantly seeking sex. The women believed that the traditional roles were restrictive, and dismissed the roles as not acceptable or rewarding for them. Consequently, they resorted to emotional manipulation or other types of sexual exploitation and did not view these behaviours and attitudes as necessarily wrong; they believed that forcing someone to have sexual relations against their will is acceptable. To support the aforementioned findings, Shea (1998) asserts that sexually aggressive women accept sexual exploitation and force as a natural part of the relationship. In their pursuit for sex, these women view men as conquests and their sexual behaviour as an indication of lust which suggests little concern about the relationship itself.

Several studies have also found that males who reported using coercive sexual behaviours were condoning traditional stereotypical ideas about male dominance and gender roles, rape myths, ASB, violence toward women and the use of verbal pressure and force to obtain sex (Emmers-Sommer, 2014; Hines, 2007). Russell and Oswald (2001) found that individuals who use sexual coercive strategies endorse game playing and manipulative attitude in heterosexual relationships, which is associated with sexual aggression. Consistently, Murrell and Dietz-Uhler

(1993) found that ASB consisted of attitudes found in game playing and manipulative relationship. As such, there is overwhelming evidence showing that the dark personality types are sexually exploitative and manipulative in nature in the mating context (Book et al., 2007; Jonason et al., 2009). Previous studies found that the dark tetrad personality types are maladaptive traits that are correlated to sexual aggression (Paulhus et al., 2018) and violence (Buckels et al., 2013). For example, sadism is associated with preference for violent games (Greitemeyer, 2015), seeking conflict with others on social media (Buckels, Trapnell, & Paulhus, 2014; March et al., 2017) and using personal resources to punish uncooperative individuals. Russell et al. (2017) posits that the dark personality types and ASB were associated with sexual violence and aggression in men. Thus, it suggests that hostile attitudes about interpersonal relationships promote sexual violence in women and men, demonstrating insidious nature of rape myths. Hostile masculinity has been consistently associated with sexual violence (Abbey, Jacques-Tiura, & LeBreton, 2011). Similarly, Chory and Goodboy (2011) found that individuals low in agreeableness are associated with violent game playing which in turn is related to dark personality types.

Studies have indicated that the dark personalities are opportunistic and volatile in relationship contexts (Jonason et al., 2009; Jonason & Kavanagh, 2010). Researchers have stressed that the dark personality types perpetuate sexual exploitation by minimizing the standards for one-time sexual encounters, utilizing deception and aggressive tactics to obtain sex (Baumeister et al., 2002; Buss & Duntley, 2008; Camilleri et al., 2009). In support of the aforementioned statement, Jones and Olderbak (2014) point out that an explanation of unrestricted sexual behaviour among the dark personality types can be seen as a results of their manipulative and exploitative nature, which represent ASB in this study. Previous studies assert that adversarial beliefs held by women and men contribute to high levels of hostility and sexual aggression, accordingly the dark personality types have been associated with both hostility and sexual aggression (Book et al., 2007;

McHoskey, 2001). Hence, the current study expects a significant positive relationship between the dark tetrad personality types and ASB in an African student population. The reason being that the presence of sexual violence in heterosexual relationships in South Africa remains extremely high, regardless of the political and legal commitment to create and sustain a progressive egalitarian society. James and LeBreton, (2010) argue that individuals who are extremely aggressive seem to view the world as hostile because they impute adversarial motives in social relations.

Walker (2005) argue that holding adversarial sexual beliefs suggests sexual prowess, through coercion, as a common method to ensure male dominance and control of women and often elicits social respect from other men. Furthermore, the fact that ASB is linked with rape myth acceptance would mean that the subscription to rape myths by members of society negates and trivializes the experience of many victims, including women and children in South Africa. With respect to the above argument, the implication of dark personality types endorsing ASB amongst African students in South Africa increases the risk of sexual violence, harassment and aggression in heterosexual relationships. Therefore, the present researcher posits that increasing an understanding of dark personality types' behaviours and their motives towards exploitative sexual relations could inform prevention efforts. Additionally, the implementation of awareness campaigns on gender roles/equality would eventually reduce adversarial sexual beliefs held by both males and females.

2.3.9 **The dark tetrad personality types and ambivalent sexism**

Sexism is often referred to as hostility towards women that promotes prejudicial attitudes and behaviours (Forbes & Adams-Curtis, 2001). Eagly and Mladinic (1993) explain that sexism contains traditional sex role attitudes that have a combination of positive and negative judgements of women. Thus, Glick and Fiske

(1996) defined ambivalent sexism as both hostile and benevolent elements of sexism. Benevolent sexism (BS) is defined as a set of coordinated attitudes which categorize women stereotypically and in confined roles, whereas hostile sexism (HS) represents an expression of antagonism concerning women, which is in line with Allport's original conceptualization of prejudice (Glick & Fiske, 2001).

BS, in particular, presupposes a less vicious form of sexism. Berke (2009) indicated that it is essential to acknowledge the negative implications of subjectively positive stereotypes. A similar sentiment has been expressed by Glick and Fiske (2001) that men's sexism tends to be strongly related to gender inequality within societies and it cannot be considered good despite the positive feeling, as it underpins the traditional stereotyping and masculine dominance which is often damaging in relationships. Those with benevolent sexist beliefs see women as weak individuals require protection and provision (Glick & Fiske, 1996). Although these traits and attitudes seem to entail behaviours that are advantageous to women, research has shown that BS is just as oppressive as HS (Glick & Fiske, 2001; Lemus, Moya, & Glick, 2010).

There are also implicit, yet equally destructive interpersonal demonstrations of BS. Dardenne, Dumont, and Bollier (2007) state that men who favour BS classify themselves as superior to women, hence, treat them in a patronizing manner. Researchers have argued that men fail to understand their supposed benevolent sexist acts as oppressive and often are fixated on fulfilling their traditional gender roles as providers in romantic relationships (Glick & Fiske, 2001; Good & Sanchez, 2009). This pattern is particularly seen in today's romance culture where there are expectations that men have to be chivalrous and for women to desire chivalry (Viki, Abrams, & Hutchison, 2003).

According to ambivalent sexism theory, traditional attitudes towards both sexes entail benevolent and hostile components whose origins stem from long-existing

heterosexual relations which are traceable to traditional ideologies (Christopher & Mull, 2006). Glick and Fiske (1996) project that hostile attitudes represent intentional and antagonistic attempts at influencing who heterosexual partners are supposed to be in society. In addition, ambivalent sexism supports the idea that heterosexual interdependence creates subjective benevolence, although it still remains sexist portraying reasons for gender inequality. The benevolent attitudes which view women as nurturing subordinates and men as assertive providers, represent the “soft power” that people use to control their partners. Ambivalent sexism theory further illustrates that hostility and benevolence interact together to promote gender inequality even in people’s most intimate relationships.

Past research shows that by condoning BS, some women are able to handle the perceived threat of violence from men; hence, it is an ideology that extols the virtue of the traditional woman (Berke, 2009). Glick et al. (2004) wrote that in societies where men show more HS, women strongly condone BS, which seems to ensure protection for them. This means that in the face of male threat, some women do not challenge the traditional gender relations, but reinforce them through BS, an ideology in which female’s adherence to traditional roles triggers male protection. This suggests that women’s acceptance of BS may indicate an attempt to find solution to psychological conflict between possible threat from men and the desire for intimacy (Fischer, 2006). Fischer adds that women who accept BS, possibly do so because they view men as being naturally hostile toward independent, modern women. Johnson and Ferraro (2000) indicate that men may resort to violence when they perceive a challenge to their dominance within a heterosexual relationship.

A study by Viki and Abrams (2002) has shown that people with benevolent sexist beliefs may be in agreement to the idea that women who have violated traditional sex-role norms by conducting themselves in a manner that invites sexual advances, get raped. Consistently, Cleveland and Koss (1997) assert that the role

of male as a protector and provider could cause an increase in sexual coercion as a result of the belief among men and some women, that sex is a compensation for providing something of value to the women. The endorsement, therefore, of BS is linked to placing blame on female victims of rape and domestic violence, while ignoring the intentions of male perpetrators (Abrams, Viki, Masser, & Bohner, 2003; Glick, Sakalli-Ugurlu, Ferreira, & Souza, 2002). Larkin and Popaleni (1994) stressed that rape or domestic violence are strategies for establishing and maintaining power and control over women in sexual relationships. Sex is defined by male's need and initiation, while rape and violence are used by men to affirm their sexual right, and to create intimidation in order to enforce compliance from their victims (Lloyd & Emery, 2000). Studies continue to reveal that male control of women and notions of male sexual entitlement occur prominently in the dominant social constructions of masculinity and perpetuate sexual aggression (Jewkes & Abrahams, 2002; Lloyd, 1991).

Burt's (1980) work is compelling in its demonstration that specific attitudes towards women, beliefs about appropriate gender roles and similar attitudinal variables are associated with sexual aggression and sexual coercion. Digman (1990) (cf. Forbes, Adams-Curtis, White & Holmgren, 2003) showed that the five factors or dimensions of personality are associated with ambivalent sexism. The dark personality types, together with the Big Five, were found to be linked to prejudice (Anderson & Cheers, 2017; Hodson, Hogg, & MacInnis, 2009). Consistently, Forbes and Adams-Curtins (2001) found that the Big Five are associated with sexual aggression, which in turn is related to stubbornness, callousness, irritability, and hostility. A recent study demonstrates that narcissism is characterized as friendly-dominant, Machiavellianism as hostile-submissive, psychopathy and sadism rather with a hostile-dominant interpersonal style (Rauthmann & Kolar, 2013).

Recent evidence shows that the dark personality types represent an exaggerated self-worth and importance, superiority over others, and attention-seeking in nature (Vernon et al., 2008). For example, Hodson et al. (2009) found that dark personality types are related to prejudice and that they are self-focused, care less about others, frequently express disapproval and negativity toward those they consider as outgroups. In support of the findings, Altemeyer (1998)(cf. Sidanius, Kteily, Sheehy-Skeffington, Ho, Sibley, & Duriez, 2013) argues that the dark personality types are associated with social dominance which is a strong predictor of prejudice. Pratto et al. (1994) believes that social dominance orientation endorsed inequalities resulting from competition in social context amongst the dark personality types. A study by Forbes and Adam-Curtins (2001) suggest that sexism reflects gender competition between men and women which relates to resource scarcity and the shortage of social/career development chances. Lee, Fiske, Glick, and Chen (2010) explain further that BS is positively related to mate-selection criteria favoring female submissive characteristics. Recent studies have shown that the dark personality types select mates based on physical attractiveness which is believed to be associated with good genes (Carter et al., 2014; Lyons, Marcinkowska, Helle, & McGrath, 2015).

In light of the above argument, it is expected that ambivalent sexism would mediate the association between the dark personality types and socio-sexuality amongst African students. The endorsement of ambivalent sexism by the dark personality types in sexual relationships will have implications in the sexual sphere. Dark personality types may hold sexist attitudes to perpetuate intimate partner violence. Mantell et al. (2009) similarly reported tensions between the changing of gender norms in post-apartheid South Africa which recognize women's rights (or lack thereof) and the limiting of traditional gender norms. Boonzaier (2005) explains that some men in South Africa feel that their gender identities have been thwarted, be it through material, social, or economic challenges. As such they hold on to their ideal self-image of having agency through the perpetration of violence against

women. This is how some men sense themselves as powerful and potent in fantasy, despite environmental limitations which challenge sexism.

2.4 Summary of the chapter

In this chapter, definitions of concepts used and the theoretical framework that conceptualized the dark tetrad personality types' sexual behaviours were provided in details. The lack of an integrated theoretical explanation in literature, resulted to the adoption of an integrative approach to guide the present study. Thus, the integrative approach constituted of the DSM-5 dimensional model, evolutionary approach, trait approach, five factor model, interpersonal circumplex model and the seven factor model to provide a clear understanding of the dark tetrad personality types. A review of literature in relation to the dark personality types' sexual behaviours was also outlined in-depth. The impact of gender was evident and persuasive on the dark personality types' sexual behaviours. The next chapter outlines the methodology used in this study.

CHAPTER THREE
STUDY ONE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the methodology that was employed in study one. It mainly describes the tools and techniques used. It also presents the research design, variables of the study, data collection procedure, and a description of the participants who took part in the study. The chapter further describes the method of data analysis used in the study.

3.2 Research approach and paradigm

Babbie (2010) defines a quantitative research method as involving the gathering of numerical data and generalizing it across groups of people for an explanation of a particular phenomenon. Welman, Kruger and Mitchel (2005) adds that the quantitative research method emphasizes on the measurement and analysis of causal relationships between variables. The data is collected through various instruments, such as polls, questionnaires, and surveys, or by adapting available statistical data using computational techniques. Quantitative research follows the empiricist paradigm because it is centered on hypothesis testing. Creswell (2013) argues that the empiricist paradigm reveals a deterministic philosophy in which causes probably determine effects or outcomes. Thus, the problems studied by the empiricist paradigm reflect a need to examine causes that influence outcomes. Creswell (2013) adds that developing numeric measures for observations and studying the behaviour of individual become paramount for an empiricists. Hence, the present study used quantitative method which follows the empiricist paradigm to determine the association between the dark tetrad personality types and sexual behaviours. The rationale is that the quantitative research method allow the

researcher to determine the association between an independent variable and a dependent or outcome variable within a population.

3.3 Research design

The study used a cross-sectional research design, which is sometimes known as a correlational design. In a cross sectional design, variables of interest in a sample of subjects are assessed once and the relationships between them are established (Breakwell, Fite-Schaw, & Hammond, 2000). Cross-sectional studies can be conducted using any method of data collection, such as telephone interviews, face-to-face interviews, mailed questionnaires, and self-administered questionnaires (Lavrakas, 2008). Lavraskas (2008) added that various sampling frames can also be used to choose eligible respondents for cross-sectional studies. The rationale for using a cross-sectional design is that it does not require that the researcher be in contact with participants over a long period of time. Thus, participants in this study responded to questionnaires at a single point only, and no follow up data collection activity was done.

3.4 Research variables

Independent variable	:	Dark tetrad personality types
Dependent variable	:	Infidelity, sexual aggression and socio-sexuality
Covariate	:	Gender

3.5. Study population and sampling

The sample of the study consisted of 261 students from a historically Black institution in Limpopo, South Africa. Participants of the study were recruited using a convenience sampling procedure, a method whereby readily accessible persons are used in the study (De Vos, Strydom, Fouche, & Delport, 2011). Since the

method of sampling is risky, being open to bias, attempts were made to reduce its limitations; attempts were made to make the sample almost representative of the population where it was drawn, by approaching varied departments of the institution to recruit participants. Nonetheless, the sample was still based on the accessibility and availability of the students.

In the end the sample of the study was comparable to that used in similar studies in the literature (Carter et al., 2014; Jonason & Schmitt, 2012).

3.6 Data collection procedure

Prior to the commencement of the research, the researcher obtained appropriate ethical approvals from the University of Limpopo‘s Turfloop Research and Ethics Committee (TREC/142/2018, Appendix A). Among the directives of the committee was that the researcher was supposed to ensure that procedures were fair, unbiased, and not harmful to participants. Data for study one was collected from one of the two selected universities in Limpopo (see Appendix B). The collection was done at different times and venues, but it was restricted to weekdays.

The researcher met with the students at their respective lecture halls for data collection. Informed consent was obtained from potential participants in a written form (Appendix C) and supplemented by verbal consent. Prior to signing the consent form, a general description of the study was given to prospective participants. They were told that the study is about men and women’s thoughts about sexual matters. Those who completed the consent form were also asked to confirm their participation verbally. They were made aware that once data were collected, confidentiality and anonymity going to be maintained by concealing their identities through coding their names using numbers. They were also assured that readers would not be able to identify who provided the information since their

names would not be included in any documents, including publications emanating from the study.

The measures were administered simultaneously to all participants. Four trained research assistants were recruited into the study to help with the administration of the questionnaires. In addition, the researcher was available every time data was collected in order to lead and monitor the proceedings. Debriefing was conducted as soon as participants completed filling in the questionnaires. The debriefing session involved informing the participants about the purpose of the study, clarifying the hypothesis of the study, misconceptions during completion of questionnaires and identifying any potential harm they might have been exposed to during data collection. They were told that arrangements were made, in the unlikely event of participants experiencing any form of discomfort when completing the scales in this study, to refer them for professional help. However, there was no emotional or psychological risks reported during the debriefing sessions.

3.7 **Measurements**

3.7.1 **Demographic Information**

The participants completed the demographic questionnaire (see Appendix D) which was designed to collect their personal information and family situation. The participants indicated their age, gender, domicile, family structure, marital status, ethnic group, parent's educational level, and the family social class status (participants' self-reported family socio-economic standing).

3.7.2 **The dark tetrad scale**

The dark tetrad personality types were measured using the short dark triad scale (SD3) and the short sadistic impulse scale (SSIS). The latter is a separate scale

and will therefore be described on its own later. The SD3 is a 27 item measure developed by Jones and Paulhus (2011). It assesses the dark personality types of narcissism, Machiavellianism and psychopathy and each subscale has nine items. Each item was rated on a five-point Likert-type scale with five items reversed to control for response sets. The endorsement options were as follows: “strongly disagree”, “disagree”, “neither agree or disagree”, “agree” to “strongly agree”. The participants responded to items such as: “It’s not wise to tell your secrets” and “Most people can be manipulated”.

The reliability coefficient for each subscale obtained by Jones and Paulhus (2011a) was high: narcissism was α = .77, Machiavellianism was α = .78 and psychopathy was α = .80. The inter-correlations between the subscales (Machiavellianism, psychopathy and narcissism) ranged from *r* = .22 to .40. In sum, Jones and Paulhus (2011a) argued that the SD3 provides a short but reliable instrument that demonstrates predictive, criterion, and concurrent validity.

On the other hand, sadism was assessed using the SSIS which was developed by O'Meara et al. (2011). It contained 10 items, representing a single factor structure that measured a dispositional tendency to enjoy hurting others. It contained items such as: “Hurting people would be exciting” and “I have humiliated others to keep them in line”. Each item was rated on a five-point Likert-type scale with one reversed item to control the response sets. The response options ranged from “never”, “strongly disagree”, “disagree”, “agree” and “strongly agree”. In developing their scale, the researchers used a sample of 407 Irish undergraduates and the scale’s coefficient alpha was high (α = .87) (O'Meara et al., 2011). The concurrent validation of the scale was established and it was good (O'Meara et al., 2011)

In the current study the reliability coefficient obtained for the Machiavellianism subscale was α = .46; narcissism α = .72, psychopathy was α = .77, SSIS was α = .87, and for the total SD3 scale was α = .75. The reliability score for the

Machiavellianism subscale was low in the present study; as a result, an item-total correlation was conducted to improve the alpha. The results indicated that no item can be removed to improve reliability. Therefore, the Machiavellianism subscale was maintained despite the low reliability coefficient to retain the construct as the dark tetrad personality types.

3.7.3 **Infidelity proneness scale (IPS)**

The IPS was developed by Drigotas et al. (1999) to evaluate emotional and physical intimacy with a specific person outside the respondent's primary relationship. It consisted of 11 items such as “How attractive did you find this person” and “How much time did you spend thinking about this person?” Participants rated the level of intensity of each feeling/behaviour on an 8-point Likert scale ranging from “no feeling/behaviour” to “extreme feeling, or a great deal of the behaviour”. To test the validity of the scale, the authors used a sample of 67 undergraduate students and 76% indicated that items of the measure constituted infidelity (Drigotas et al., 1999); and the estimated reliability of the scale was an alpha coefficient of .93. In this study the reliability coefficient was also high (α = .91).

3.7.4 **The sexual coercion scale (SCS)**

The SCS assessed the participant’s behaviour that is intended to compel their partner to engage in unwanted sex. The scale covered a range of coercive acts, from verbal insistence to physical force. Straus, Hamby, Boney-McCoy, and Sugarman (1996) indicate that the construction of the SCS began by crossing three levels of coercion (insistence, threats of force, and actual force) with three types of sexual acts (vaginal, anal, and oral). They further indicated that the original item pool included four other sexual acts for which only the insistence level of coercion was asked. Thus, the pool of 13 items was pretested and items were

selected, leading to the final version of 7 items. The final scale included items such as: “I made my partner have sex without a condom” and “I used threats to make my partner have oral or anal sex”. Each item was rated on a 7-point Likert scale ranging from “This has never happened” to “not in the past year, but it did happen before”. The scale had reported an alpha coefficient of .87 and in this study, the reliability coefficient was good (α = .74). Straus et al. (1996) established both construct and discriminant validity of the scale and it was found to be good. The scale was used to assess sexual aggression because it can detect sexual activities through the use of verbal pressure to physical force. The elements are considered important in assessing sexual aggression, which is consistent with other studies who have used different measures (Abbey et al., 2011; Schuster, Krahe, & Toplu-Demirtas, 2016).

3.7.5 **The revised socio-sexual orientation inventory (SOI-R)**

The SOI-R is a 9 item self-report measure developed by Penke and Asendorpf (2008). It includes three subscales corresponding with the desire, behaviour, and attitudes facets of socio-sexual orientation. The behaviour subscale (α = .85) reflects a person’s history of casual sex (e.g., “With how many different partners have you had sexual intercourse on one and only one occasion?’’), the socio-sexuality attitudes’ subscale (α = .87) reflects a person’s beliefs about casual sex (e.g., “I can imagine myself being comfortable and enjoying casual sex with different partners”), the desire subscale (α = .86) reflects person’s interest in uncommitted sex (e.g., “How often do you experience sexual arousal when you are in contact with someone you do not have a committed relationship with?’’).

In order to obtain the total score of each of the subscales, items 1-3 were aggregated to obtain the behaviour subscale, after reverse coding item 6, item 4-6 were aggregated to form the attitudes subscale, and item 7-9 were used to form the desire subscale (Penke & Asendorpf, 2008). A global SOI-R reliability

coefficient obtained by Penke and Asendorpf was high (α = .83). The total score of the global SOI-R measure can be obtained by computing the means of all nine items. The construct validity of the scale was established (see Penke & Asendorpf, 2008). In the present study, participants responded to each item using the alternative 5-point (ranging from 1-5) response format proposed by Penke and Asendorpf (2008). To obtain the SOIR-Behaviour score, the response options were '0', '1', '2—3', '4—7', and '8 or more', and these were coded as 1 to 5; the SOI-R Attitude score the response options were on a continuum anchored on each end as 1 (strongly disagree) and 5 (strongly agree) respectively; and the SOI-R desire score was calculated by summing the five scale anchors, which were 1 (never), 2 (very seldom), 3 (about once a month), 4 (about once a week), and 5 (nearly every day). The possible aggregated total score was 15. The reliability coefficient of the behaviour subscale was α = .81; the attitudes' subscale was α = 0.67; and the desire subscale was α = .87. The alpha coefficient of the global SOI-R was also good (α = .88).

3.8 **Summary of the chapter**

This chapter provided the methodology that informed this study. The methods employed were identified to explicitly ensure the quality of this study in terms of reliability and validity. As a result, the nature and properties of the instrument used for data collection were discussed. The next chapter focuses on the findings of the study.

CHAPTER FOUR

RESULTS

4.1 Introduction to data analysis

The outcomes of data analysis are presented in this chapter. All the data were "cleaned", coded and analyzed using both the SPSS 24.0 (IBM Corporation, 2017) and AMOS 24.0 programs (Arbuckle, 2016). Prior to the commencement of the main analysis, all relevant scale items were reverse scored, and missing values were replaced with the mean. The SPSS was used to determine the reliability levels of the instruments and the values were presented earlier. Furthermore, descriptive statistical analysis was conducted in order to provide a description of the sample. For the main analysis, SEM path analysis (PA) using the maximum likelihood (ML) estimation was applied to examine the cross-sectional associations between dark tetrad personality types and infidelity, sexual aggression and socio-sexuality. Multiple criteria were used in determining the goodness of fit to the data for the hypothesized path model. These included the Chi-square statistic to *df* ratio (x^2⁄df), the root mean square error of approximation (RMSEA) along with its related 90% CI, the comparative fit index (CFI), the Tucker-Lewis index (TLI) and the normed fit index (NFI). The models were accepted as providing a good fit if x^2⁄df < 1.5, $p > 0.05$, CFI and TLI ≥ 0.95 (i.e., acceptable at > 0.90), RMSEA < 0.06 and NFI >0.90 (Hu & Bentler, 1999).

4.2 Preliminary data analysis results

The first step of data analysis was to provide a description of the study sample. Table 1 below shows the socio-demographic information of the participants, which was based on a total sample of 261 students from the research site. Most participants (52.5%) fell within the age range of 18 to 20 years, and the entire

sample's mean age was 21.17 years, with a standard deviation of 3.017. The majority of the participants were males (59.0%) and most of them came from rural areas (69.7%). Family structure was categorized in terms of the individuals who are heading the family. A substantial number of students came from families headed by both biological parents (41.8%), one third (33.3%) were headed by single mothers and the least number were headed by biological fathers and stepmothers (1.5%).

Furthermore, most of the participants belonged to the Venda ethnic group (47.9%) and almost the entire sample (95, 0%) were single in so far as their marital status was concerned. In terms of their level of study, the majority were doing their first level at the university (52.8%) and the least were post graduate students (5.0%). Regarding the formal education of the parents, most of the mothers in the students' families had secondary school level education, 28.7 % had no formal education and 22.2% had tertiary education. A large proportion of fathers in the students' families had no formal education; a few (28.4%) had secondary school level education and the least (16.5%) had tertiary education. Regarding their social class, a large number (53.3%) of the students came from the lower-middle class, one third (31.4%) came from the working class and the least (2.7%) came from the upper class.

Table 1:

Demographic information of participants (N = 261)

Demographic detail	*Frequency*	*%*	$\bar{X}$	*SD*
Age				
			21.17	3.017
18 - 20 years	137	52.5%		
21 - 23 years	85	32.6%		
24 - 26 years	23	8.8%		
26 and above	16	6.1%		
Gender				
Female	107	41.0%		
Male	154	59.0%		
Domicile				
Urban area	18	6.9%		
Peri-urban area	57	21.8%		
Rural area	182	69.7%		
Family structure				
Biological parents	109	41.8%		
Single mother	87	33.3%		
Single father	11	4.2%		
Grandparents without parents	25	9.6%		
Biological mother and stepfather	10	3.8%		
Biological father and stepmother	4	1.5%		
Adoptive or foster parents	8	3.1%		
Other family type/Unspecified	7	2.7%		
Ethnic group				
Tsonga	71	27.2%		
Sotho	35	13.4%		
Venda	125	47.9%		

Demographic detail	*Frequency*	*%*	$\bar{X}$	*SD*
Participants' level of study				
First level	152	58.2%		
Second level	69	26.4%		
Third level	27	10.3%		
Post graduate	13	5.0%		
Participants' marital status				
Married	7	2.7%		
Cohabiting	3	1.5%		
Single	248	95.0%		
Separated	2	0.8%		
Mother's level of education				
Never been to school	75	28.7%		
Primary school	10	3.8%		
Secondary school	118	45.2%		
Tertiary education level	58	22.2%		
Father's level of education				
Never been to school	132	50.6%		
Primary school	12	4.6%		
Secondary school	74	28.4%		
Tertiary education level	43	16.5%		
Family social class				
Working class	82	31.4%		
Middle class	139	53.3%		
Upper middle class	31	11.9%		
Upper class	7	2.7%		

Note: Some sums may not equal 100% due to rounding error.

4.3 Gender difference on the dark tetrad personality types and sexual behaviours

T-test analyses were conducted to compare male and female participants on the dark tetrad personality types and sexual behaviours. The rationale for the analyses was to explore if there were any gender differences on the dark tetrad personality types and sexual behaviours. Previous studies indicated that males will score differently to females on the dark tetrad personality types and sexual behaviours (Jonason et al., 2010; Paulhus & Williams, 2002). The results presented in Table 2 indicate that there were no statistically significant gender differences on narcissism and sadism, and the differences on Machiavellianism were marginal ($p \leq .05$). Nonetheless, an inspection of the effect size showed that the differences on Machiavellianism and sadism could be considered important (Cohen's $d = 0.23$ and 0.20, respectively). The results demonstrate that gender scores differed significantly on psychopathy ($p \leq .001$), infidelity ($p \leq .002$) and SOI-R components of behaviour, attitude and desire ($p \leq .001$). The Cohen's ds were only large (> 0.80) for SOI-R behaviour, attitude and desire.

Table 2:

Gender difference on the dark tetrad personality types and sexual behaviours (N = 261)

Variables	*Gender*	$\overline{X}$	*SD*	*T*	*Df*	*p-value*	*Cohen's d*
Machiavellianism	Male[1]	32.04	4.849	-1.839	225.818	.067	-0.232
	Female[2]	33.15	4.772				
Narcissism	Male [1]	31.50	6.113	-1.172	217.422	.242	-0.149
	Female [2]	32.37	5.689				
Psychopath	Male [1]	23.07	6.925	3.425	221.305	.001	0.432
	Female[2]	20.17	6.612				
Sadism	Male [1]	20.46	7.236	5.126	208.538	.113	0.201
	Female[2]	18.97	7.587				
Infidelity	Male[1]	49.42	15.479	3.084	257.674	.002	0.390
	females[2]	42.14	20.746				
Sexual aggression	Male[1]	5.30	6.538	2.717	198.054	.007	0.344
	Female[2]	3.29	5.355				
SOI-R Behaviour	Male[1]	7.98	2.891	10.846	155.608	.000	1.371

Variables	*Gender*	$\overline{X}$	*SD*	*T*	*Df*	*p-value*	*Cohen's d*
	Female[2]	4.90	1.679				
SOI-R Attitude	Male[1]	8.42	3.929	10.107	143.713	.000	1.278
	Female[2]	4.68	1.983				
SOI-R Desire	Male[1]	8.05	3.522	10.462	162.965	.000	1.323
	Female[2]	4.34	2.200				

Note: [1]Males = 107, [2]Females= 154.

4.4 Main analysis

4.4.1 SEM analysis and results

SEM techniques are designed to evaluate how well a theoretical model represents the data. It shows the relationship amongst observed variables with the primary goal of providing a quantitative test of the hypothesized theoretical model. Therefore, this technique was employed to assess relationships between the exogenous (dark tetrad personality types) and endogenous (infidelity, sexual aggression and socio-sexuality) variables. The correlation matrix results are presented below in Table 3 and the path diagram of the theoretical model is presented in Figure 1.

4.4.2 Correlation of the dark tetrad personality types and sexual behaviours

Measures of the dark tetrad personality types and sexual behaviours, conceptualized as infidelity, sexual aggression, and socio-sexuality, were correlated against each other. As shown in Table 3, most correlations were significant at $p \leq 0.05$ level. On measures of the dark tetrad personality types, the results indicated that Machiavellianism was positively associated with narcissism and psychopathy at $p \leq 0.05$ *and* $p \leq 0.01$. However, the coefficients for the psychopathy-Machiavellianism and psychopathy-narcissism associations were rather small. Sadism was not associated with Machiavellianism and narcissism ($p > 0.05$), but positively related with psychopathy ($p \leq 0.01$).

Regarding their sexual behaviours, Machiavellianism and narcissism were not associated with any of the sexual behaviours ($p > 0.05$), whereas sadism and psychopathy were positively related. The results indicate that most of the correlations between both sadism and psychopathy and sexual behaviours were significant at $p \leq 0.05$-0.01 levels. Furthermore, the results show that the attitude component of SOI-R measured socio-sexuality was not associated with sadism (*p*

> 0.05), but positively correlated with psychopathy at $p \leq 0.01$. Nonetheless, the latter's coefficient is relatively small.

Table 3:
Correlation matrix of the dark tetrad personality types, infidelity, sexual aggression, and socio-sexuality (N = 261)

		1	2	3	4	5	6	7	8	9
1.	Machiavellianism	1								
2.	Narcissism	.337**	1							
3.	Psychopath	.139*	.186**	1						
4.	Sadism	.075	.114	.478**	1					
5.	Infidelity	.086	.116	.206**	.207**	1				
6.	Sexual Aggression	.002	.014	.193**	.228**	.264**	1			
7.	SOI-R Behaviour	.005	-.016	.217**	.157*	.348**	.384**	1		
8.	SOI-R Attitude	-.011	-.077	.142*	.080	.150*	.218**	.363**	1	
9.	SOI-R Desire	-.037	-.021	.246**	.284**	.323**	.244*	.607**	.364**	1

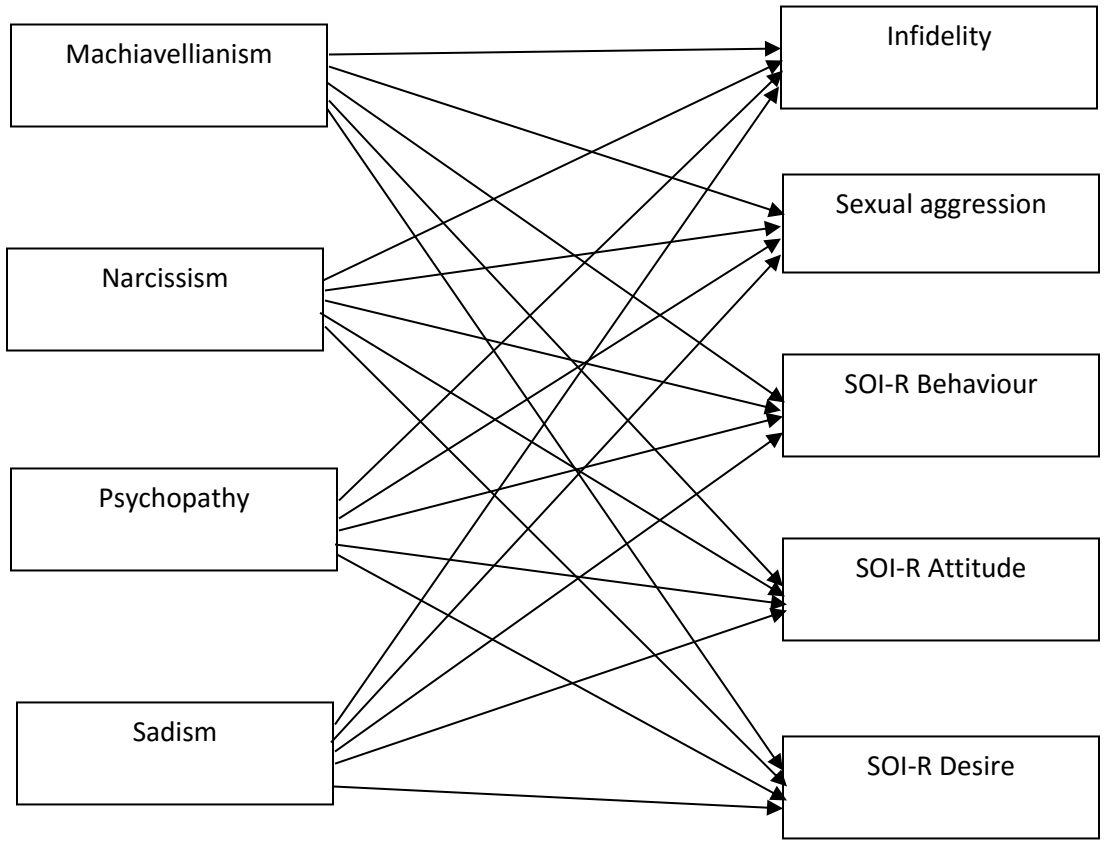
*$p \leq .05$, ** $p \leq .01$; SOI-R = the revised sexual orientation inventory.

4.4.3 **Model to data fit**

Finding a statistically significant theoretical model that has practical and substantive meaning is required before interpreting the causal paths of the structural model. In line with this, Schumacker and Lomax (2010) advise that when interpreting the measurement and structural model, establishing how well the model fit the quality of the data is imperative. This means that the extent to which the theoretical model is supported by the sample data is established. They further indicate that the model fit indices for the fit of the entire model and specific tests for the statistical significance of individual parameters in the model, are considered. To assess the model fit to data, the goodness of fit indices were computed. The hypothesized model portrayed the dark tetrad personality types and sexual behaviours (here conceptualized as infidelity, sexual aggression, and socio-sexuality). The model revealed an excellent fit to data ($X^2_{[3]} = 4.96$, $p = 0.17$; SRMR = 0.59; TLI = 0.93; NFI = 0.99; CFI = 0.99; RMSEA = 0.05, with 90% CI = 0.00 to 0.14).

Figure 1:

Path model of the dark tetrad personality types and sexual behaviours



Note: SOI-R = the revised sexual orientation inventory

4.4.4 Hypothesis No. 1: Dark tetrad personality types will predict infidelity, sexual aggression, and socio-sexuality

The results of Figure 1's analysis indicate that only sadism accounted for significant variances in infidelity and SOI-R desire (βs = 0.19; 0.17), with significant parameter estimates (Zs = 2.64; 2.87). There were no statistically significant relationships between sadism, sexual aggression (βs = 0.06; Z = 0.82) and SOI-R behaviour and SOI-R attitude (βs = 0.02; 0.01; Zs = 0.35; 0.15). Furthermore, Machiavellianism did not reach a statistically significant association with infidelity, sexual aggression, and all SOI-R components (behavior, desire, and attitude) (βs = 0.03; 0.00; 0.08; 0.01; 0.07; Zs = 0.50; 0.00; 1.34; 0.26; 0.99). Similar results were observed between narcissism, infidelity, sexual aggression and the SOI-R components (behavior, desire and attitude) (βs = 0.10; - 0.02; - 0.02; - 0.04; - 0.08; Zs = 1.47; 0.24; 0.41; 0.64; 1.25). In addition, psychopathy did not reach a significant relationship with infidelity, sexual aggression and the SOI-R components (behavior, desire and attitude) (βs = 0.01; 0.10; 0.06; 0.08; 0.06; Zs = 0.21; 1.38; 0.99; 1.24; 0.76). Therefore, the results of SEM analysis did not support hypothesis no. 1 since the only statistically significant relationships were between sadism and infidelity, and sadism and SOI-R desire.

4.4.5 Hypothesis No. 2: The association between dark tetrad personality types, infidelity, sexual aggression, and socio-sexuality will be moderated by gender

A multi-group analysis was conducted to examine if specific estimated parameters/paths differed across the gender groups. The pair-wise comparisons (i.e., critical ratios for differences [critical value of 1.96, $p < 0.05$]) of the parameters in the model are as follows: the path between Machiavellianism and sexual aggression is not statistically significantly different across the groups (Z = - 1.154; $p > 0.05$), narcissism and sexual aggression is not statistically significantly different across the groups (Z = - 0.572; $p > 0.05$), psychopathy and sexual aggression is

not statistically significantly different across the groups (Z = -1.353; $p > 0.05$), sadism and sexual aggression is not statistically significantly different across the groups (Z = 1.497; $p > 0.05$), Machiavellianism and SOI-R behaviour is statistically significantly different across the groups (Z = - 1.991; $p < 0.05$), narcissism and SOI-R behaviour is not statistically significantly different across the groups (Z = 0.520; $p > 0.05$), psychopathy and SOI-R behaviour is not statistically significantly different across the groups (Z = -0.665; $p > 0.05$), sadism and SOI-R behaviour is not statistically significantly different across the groups (Z = 1.485; $p > 0.05$), Machiavellianism and SOI-R attitude is not statistically significantly different across the groups (Z = - 0.758; $p > 0.05$), narcissism and SOI-R attitude is not statistically significantly different across the groups (Z = 1.462; $p > 0.05$), psychopathy and SOI-R attitude is statistically significantly different across the groups (Z = -2.435; $p < 0.05$), sadism and SOI-R attitude is not statistically significantly different across the groups (Z = 0.120; $p > 0.05$), Machiavellianism and desire is not statistically significantly different across the groups (Z = -0.625; $p > 0.05$), narcissism and SOI-R desire is not statistically significantly different across the groups (Z = 1.145; $p > 0.05$), psychopathy and desire is not statistically significantly different across the groups (Z = -0.904; $p > 0.05$), sadism and desire is not statistically significantly different across the groups (Z = -0.614; $p > 0.05$), Machiavellianism and infidelity is not statistically significantly different across the groups (Z = 0.303; $p > 0.05$), narcissism and infidelity is not statistically significantly different across the groups (Z = 0.392; $p > 0.05$), psychopathy and infidelity is not statistically significantly different across the groups (Z = -1.046; $p > 0.05$), and sadism and infidelity is statistically significantly different across the groups (Z = 1.961; $p < 0.05$).

The results suggest that paths between Machiavellianism and SOI-R behaviour, psychopathy and SOI-R attitude, sadism and infidelity are not equal across gender groups. That is, gender only moderates the associations between Machiavellianism and SOI-R behaviour, psychopathy and SOI-R attitude, sadism and infidelity. Similarly, the model fit comparison across gender groups and chi-squared difference test confirms the results of the critical ratios for differences. The

moderation test was found to be significant as a result of the difference in the Chi-square value between the constrained and unconstrained model being greater than cut-off value of 3.84 for females. Tables 4 and 5 present relevant statistics for multi-group comparisons of the specific parameters and the moderation test. Therefore, hypothesis no 2 is null, since gender did not moderate all the dark personality types with sexual behaviours.

Table 4:

Moderation tests for the female group (n = 154)

	Model	χ^2	*Df*	*CFI*	*GFI*	*RMSEA*	*90% RMSEA CI*	*Model comparison*	*Δ x²*	*Results on moderation*
1.	Constrained	8.8	6	0.98	0.99	0.04	0.00, 0.10			
2.	Unconstrained	1.42	3	0.99	0.99	0.00	0.00, 0.11	1 vs. 2	7.38	Significant

Note. $p < .001$; χ^2 = Chi-square test; df = degrees of freedom; CFI = Comparative fit index; RMSEA = root mean square error of approximation; 90% RMSEA CI = the root mean square error of approximation's 90% confidence interval; GFI = Goodness-of- fit index; Δx^2 = Chi-square difference value.

Table 5:

Moderation tests for the male group (n = 107)

	Model	χ^2	*Df*	*CFI*	*GFI*	*RMSEA*	*90% RMSEA CI*	*Model comparison*	*Δx²*	*Results on moderation*
1.	Constrained	8.76	6	0.98	0.99	0.04	0.00, 0.10			
2.	Unconstrained	7.32	3	0.94	0.98	0.12	0.00, 0.24	1 vs. 2	1.44	Not significant

Note. $p < .001$; χ^2 = Chi-square test; df = degrees of freedom; CFI = Comparative fit index; RMSEA = root mean square error of approximation; 90% RMSEA CI = the root mean square error of approximation's 90% confidence interval; GFI = Goodness-of- fit index; Δx^2 = Chi-square difference value.

4.5 **Summary of the chapter**

The chapter focused on the presentation of the findings. Firstly, the demographic information of the participants was provided. Thereafter, gender differences on major variables of the study were presented. Finally, the results of the main anlysis, consisting of model fitting and path analysis, were provided. The next chapter discusses the findings.

CHAPTER FIVE
DISCUSSION

5.1 Introduction

This chapter discusses the findings of the present study in relation to the existing literature. The findings are organized according to the hypotheses of the study, that is, the relationship between the dark tetrad personality types and sexual behaviours (namely; infidelity, sexual aggression and socio-sexuality) will be discussed first. Thereafter, the discussion on the moderation role of gender on the relationship between the dark tetrad personality types and sexual behaviour will be provided

The dark tetrad personality types have recently received attention as a new framework for studying personality functioning. The framework guided the design of the present study. Paulhus (2014) observed that the dark tetrad personality types in a normal, nonclinical population tend to overlap, but they each retain their distinctiveness as constructs. Paulhus explains this to mean that the common traits of the dark tetrad personality types play out differently in their characters. Hence, to shed more light the current study attempts to outline how differently each of the dark tetrad personality types relate with features of sexual behaviours, and how gender plays a role in the relationship.

5.2 The relationship between dark tetrad personality types, infidelity, sexual aggression and socio-sexuality

Based on self-reports of 261 African university students, the results demonstrate that only psychopathy and sadism were predictors of sexual behaviours. It was expected in this study that all the dark tetrad personality types will be predictors of sexual behaviours. The present findings do not concur with previous studies that have linked all the dark personality types with sexual behaviours (Jonason et al.,

2009; Mealey, 1995; Paulhus & Williams, 2002; Ross & Rausch, 2001; Schmitt, 2005). For example, narcissism and Machiavellianism were associated with infidelity, sexual aggression and socio-sexuality in previous studies (Buss & Shackelford, 1997; Jonason et al., 2009; McHoskey, 1995); and the current study found no such associations. Chabrol et al. (2009) suggest that this might be because narcissism and Machiavellianism personality types are to some extent socially desirable in societies over-emphasizing competitiveness, individualism, and success. Furnham et al. (2013) adds that narcissism and Machiavellianism have traits that minimize the socially undesirable and costly elements of having a fast life strategy. Hence, the two personality types can easily function in society. Perhaps these explanations might account for lack of significant association between both narcissism and Machiavellianism, and sexual behaviours, amongst the students in the present study.

Psychopathy and sadism, surprisingly, were strongly associated to all sexual behaviours in the correlation analysis. Researchers indicated that sadism and psychopathy shared the urge to control and dominate others as a strategy to obtain a goal in relationships (Chan & Heide, 2009; Robertson & Knight, 2014). Similarly, Jonason et al. (2009) found that sadism and psychopathy were associated with a high sex drive, and tended to lower their standards in mating contexts, particularly in short-term mating. Jonason et al. further indicate that a high sex drive may be part of the reason individuals are engaging in sexual behaviours. This might possibly give the reason the two dark personality types in the current study, namely, sadism and psychopathy, were linked with all sexual behaviours.

Nonetheless, the findings were only limited to correlation analysis; SEM analysis results indicate that sadism was the only personality type associated with infidelity and the desire component of SOI-R. In line with this finding, Book et al. (2016) found that sadism was associated with lack of emotionality, low agreeableness, and low conscientiousness. Previous studies indicated that these traits were associated with several problematic sexual behaviours, including infidelity

(Gottman, 1994; Lameiras-Fernandez & Rodrigues-Castro, 2003; Schmitt, 2004). Barta and Kiene (2005) found that individuals who possess these traits use infidelity as a mechanism to cope with emotional dissatisfaction.

In addition, in a study conducted by Guay and Knight (2006), sadism was found to be linked with sexual offending and non-sexual violent behaviours. Similarly, previous studies linked sadism with deriving sexual excitement from the physical and emotional pain of others (Johnson & Becker, 1997; Kirsch & Becker, 2007). Given the heightened sexual interests, it was not surprising that sadism was associated with the desire component of SOI-R. It was also expected in the SEM results that sadism would have an association with sexual aggression, attitude and behaviour component of SOI-R. Previous studies found that sadistic individuals tend to engage in sexual aggression and less restrictive socio-sexual behaviour (Haddad, Angman, Archer, & Garcia, 2016; King & Knight, 2012). However, these findings did not conform to what is already known in the literature.

5.3 Moderating effects of gender on the relationship between the dark tetrad personality types and infidelity, sexual aggression and socio-sexuality

Existing literature has largely documented gender as an important variable in dark personality traits' sexual behaviours (Buss & Schmitt, 1993; Jones & Paulhus, 2010; Schmitt, 2005). For example, Jonason and Websters' (2010) findings identified gender differences in a variety of 'dark personality types' sexual behaviours in a non-clinical sample. Meanwhile, in this study, gender difference was only observed on the associations between Machiavellianism and SOI-R behaviour, psychopathy and SOI-R attitude, sadism and infidelity. The aforementioned results are partly in agreement with studies that have shown gender differences on the dark personality types' sexual behaviours (Jonason et al., 2010; Jonason & Buss, 2012; Stolarski, Czarna, Malesza, & Szymańska, 2017). Sex differences in dark personality types' sexual behaviours is seen to be due to seeking dominance and prestige (Semenyna & Honey, 2015).

It came as a surprise however, that gender did not moderate all the dark personality types and sexual behaviours. Wood and Eagly (2002) argued that lack of gender difference in personality traits and sexual behaviour may be due to males and females occupying social roles that are similar. Fisher (1998) believe that when there is a social change such as females' economic and reproductive independence, gender differences will erode in sexual behaviours. Several researchers have argued that the lack of gender differences in sexual behaviours was the results of social desirability effects in an attempt to conform to normative expectations (Alexander & Fisher, 2003; Meston, Heiman, Trapnell, & Paulhus, 1998). Perhaps this might account for lack of gender differences on some of the dark personality types' sexual behaviours.

In addition to the moderating effects of gender, the present study further compared male and female participants on the dark tetrad personality types and sexual behaviours. In the final analysis, gender only moderated the associations between Machiavellianism and SOI-R (behaviour), psychopathy and SOI-R (attitude), sadism and infidelity. This study indicated that males scored higher than their female counterparts on different features of socio-sexual orientation scale. In support of this finding, Jonason (2008) indicate that males view sex with status orientation and report more sexual experience. In African communities, Hooks (2004) notes that males are less restricted in socio-sexual behaviours as it asserts their masculinity and manhood. Perhaps this was the reason males engaged in socio-sexual behaviours more than their female counterparts in this study. Additionally, previous studies found that males and females scored differently on the dark tetrad measure (Chabrol et al., 2009; Jonason et al., 2009; Mealey, 1995; Rausch & Ross, 2001). It was also expected that gender scores will differ on all the dark personality types in this study, to conform to the existing literature (Campbell et al., 2002; Rowe, 1995). However, gender differed only on psychopathy, with males outscoring females. Consistently, studies have found that men generally score higher on psychopathy than women in forensic settings as

well as in the general population (Forth, Brown, Hart, & Hare, 1996; Grann, 2000; Strand & Belfrage, 2005). It is not clear why there is a large sex difference in measures of psychopathy in the available literature. Many of the explanations of this sex difference are descriptive or reflect proximate mechanisms like hormone levels and socialization, rather than ultimate explanations that would address the evolutionary significance of this apparent behavioural dimorphism (see Cale & Lilienfeld, 2002, cf. Honey, 2017). It was surprising to note that there was no gender difference on sexual aggression. Given that studies have generally found males to be sexually aggressive than their female counterparts (Bjorkqvist, Osterman, & Hjelt-Back, 1994; Christopher & Pflieger, 2007). The reason for lack of gender difference on sexual aggression could be due to response biasness in this sample. Especially, because in the preliminary analysis sexual aggression was a significant variable when correlated with dark personality types.

Moreover, this study showed that males scored higher than their female counterparts on infidelity. Tsapelas et al. (2009) explain that men engage in infidelity when there is sexual boredom in their primary relationship. The fact that gender did not moderate all the associations between dark personality types and sexual behaviours in the current study was of concern. Since it does not conform to the large body of existing literature (Buss & Schackelford, 1997; Campbell et al., 2002; Jonason et al., 2009; Rowe, 1995; Schmitt, 2005). Nonetheless, this study contributes to the existing body of knowledge on the framework of the dark tetrad personality types. It also provides great understanding of the dark tetrad personality types' manifestation in a sexual context amongst samples of African students.

5.4 **Summary of the chapter**

This chapter focused on discussion of study findings to determine whether they are consistent or not with the available literature. The study investigated the relationship between the dark tetrad personality types and sexual behaviours.

Psychopathy and sadism were positively related to infidelity, sexual aggression and the socio-sexual orientation components. The results of SEM showed that only sadism was associated with SOI-R desire and infidelity. It was surprising that Machiavellianism and Narcissism were not related to sexual behaviours both in correlation and SEM analyses, findings which are contrary to the current trend in the literature. The study did not provide clear evidence to account for Machiavellianism and narcissism's lack of association with sexual behaviours in these findings.

Furthermore, the current study established that gender moderated the associations between Machiavellianism and SOI-R behaviour component, psychopathy and SOI-R attitude component, sadism and infidelity. It was expected that gender will play a significant role in an African population, where engaging in sexual behaviours is associated with power and social status for men. It was also interesting to note that on the dark tetrad measure, males and females differed only on psychopathy. The results are uncommon when viewed against the existing body of knowledge on the dark personality framework.

CHAPTER SIX
STUDY TWO: INTRODUCTION AND RESEARCH METHODOLOGY

6.1 Introduction

Study two extended study one by replacing some of the sexual behaviour measures. Ambivalent sexism and ASB substituted infidelity and sexual aggression, and socio-sexual orientation was retained. Ambivalent sexism and ASB were considered to be constructs operating more at a cognitive or attitudinal rather than behavioural level. Of course socio-sexual orientation is a combination of both attitudinal and behavioural levels. Ambivalent sexism consists of hostile and benevolent components (Glick & Fiske, 1996, 1997, 2001).

The study sought to examine the mediation of ASB and ambivalent sexism on the relationship between the dark tetrad personality types and socio-sexuality. The second study, just like the first, finds motivation from frameworks such as that of Rolleri (2003), who hypothesized that gender beliefs, attitudes and behaviours arise from the social conditioning of males and females and subsequently become important determinants of sexual behaviours. Previous studies add that the social construction of male and female sexualities encourage male dominance and restrict female expression which operate to legitimize coercive behaviour in heterosexual relationships (Hird, 2000; Hird & Jackson, 2001; van Roosmalen, 2000). Additionally, other researchers have argued that gender norms and unequal-power relations compromise women's sexual health in sexual relations (Heise, Raikes, Watts, & Zwi, 1994; Maman, Sweat, Campbell, & Gielen, 2000). However, little is known on whether gender beliefs and attitudes have similar influences on the dark tetrad personality types' sexual behaviours in an African context. Varga (2003) insists that African people, and by extension African students, still adhere to traditional gender roles in modern times. The fact that traditional attitudes towards both sexes have benevolent as well as hostile components (Glick & Fiske, 1996) and are linked with acceptance of rape myth

and adversarial sexual beliefs towards women inspired the present study. Hence, the current study selected ASB and ambivalent sexism as gender beliefs or attitudes that will mediate the association between the dark tetrad personality types and socio-sexuality.

6.2 Research methodology

6.2.1 Description of the population

The sample of the study consisted of 275 students from the University of Limpopo which is predominantly African in the composition of its student body. According to Table 6, the mean age of the students was 21.95 (SD = 2.785). The majority (52.5 %) of them were aged between 18 to 20 years. Likewise, one third (32.6%) were between 21 to 23 years. The results also showed that one in six students (60.4%) were female. Nearly 66% of the students were from rural areas and just over half (50.5%) of them were raised by biological parents, followed by those living with single parents (27.6%); only a few (1.8%) were living with a biological father and stepmother. The majority (54.7%) of the participants were Sotho speaking and only a few (8.4%) were Venda speaking. Furthermore, over half (52.4%) of the students were in their second level of study, followed by those in the third level, and the least number (2.5%) were post-graduate students. Almost all (97.5%) of the students in the study were single. More than half (52.4 %) of them reported that their mothers have never been to school, and were followed by those whose mothers had secondary level education (28.4%). Nearly seven out of ten (69.5%) students indicated that their fathers have never been to school and just over two-percent (2.2%) had fathers with a primary level of education. Most participants (49.1%) were from a working-class family background, followed by those from a middle class background (35.3%), and the lowest proportion (1.5%) were from an upper class background.

Table 6:

Description of participants' socio-demographic information (N = 275)

Demographic detail	*Frequency*	*%*	$\overline{X}$	*SD*
Age				
			21.95	2.785
18 - 20 years	137	52.5%		
21 - 23 years	85	32.6%		
24 - 26 years	23	8.8%		
26 and above	16	6.1%		
Gender				
Female	166	60.4%		
Male	109	39.6%		
Domicile				
Urban area	51	18.5%		
Peri-urban area	45	16.4%		
Rural area	178	64.7%		
Family structure				
Biological parents	139	50.5%		
Single mother	76	27.6%		
Single father	9	3.3%		
Grandparents without parents	11	4.0%		
Biological mother and stepfather	14	5.1%		
Biological father and stepmother	5	1.8%		
Adoptive or foster parents	6	2.2%		
Other family type/Unspecified	15	5.5%		
Ethnic group				
Tsonga	41	15.0%		
Sotho	150	54.7%		
Venda	23	8.4%		

Demographic detail	*Frequency*	*%*	$\overline{X}$	*SD*
Other	60	21.8%		
Participants' level of study				
First level	34	12.4%		
Second level	159	57.8%		
Third level	75	27.3%		
Post graduate	7	2.5%		
Marital status				
Married	7	2.5%		
Single	268	97.5%		
Mother's level of education				
Never been to school	144	52.4%		
Primary school	15	5.5%		
Secondary school	78	28.4%		
Tertiary education level	38	13.8%		
Father's level of education				
Never been to school	191	69.5%		
Primary school	6	2.2%		
Secondary school	44	16.0%		
Tertiary education level	34	12.4%		
Family social class				
Working class	135	49.1%		
Middle class	97	35.3%		
Upper middle class	39	14.2%		
Upper class	4	1.5%		

Note: Some sums may not equal 100% due to rounding error.

6.2.2 Method and Procedure

The sampling method and procedure used in study two are similar to those used in study one.

6.3 Research variables

Dependent variables	:	Socio-sexuality (namely, SOI-R behaviour, attitude and desire)
Moderators	:	ASB, ambivalent sexism (namely, BS and HS)
Predictor variables	:	Dark tetrad personality types (namely, Machiavellianism, narcissism, psychopathy, and sadism)

6.4 Measurements

6.4.1 Demographic questionnaire

Demographic details were obtained using the following variables: age, gender, domicile, family structure, marital status, family social class, and participants' and their parent's educational level.

6.4.2 Dark Tetrad Scale

The dark tetrad scale, which is constituted by the SD3 and SSIS, was used in study one and was described therein. The descriptions and some of the psychometric properties still apply in study two. In the present study, the reliability coefficients obtained were as follows: Machiavellianism $\alpha = .51$, narcissism $\alpha = .29$, psychopathy $\alpha = .60$ and SSIS $\alpha = .76$. The Cronbach's alpha for the total SD3 scale was $\alpha = .59$. It was observed that the reliability coefficient for the narcissism subscale was low in the present study; as such, an item-total correlation was

conducted to improve it. The results indicated that item 17 was problematic. Its deletion improved alpha reliability to .38, which was still low. Therefore, the narcissism subscale was used in its original form despite the low reliability coefficient to retain the integrity of the entire scale and use it as such as part of the dark tetrad personality type construct.

6.4.3 **The Ambivalent Sexism Scale (ASS)**

The ASS is a 22 item self-report measure developed by Glick and Fiske (1996) to assess sexist attitudes. It consists of two subscales that tap the dimensions of hostile sexism (HS) and benevolent sexism (BS). Each of the subscales contains eleven items designed to measure attitudes relevant to power (dominative or protective paternalism), gender differentiation (competitive or complementary), and heterosexuality (hostile or intimate heterosexuality)**.** The HS subscale contains items such as “Women are too easily offended,” and the BS subscale contains items such as “No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman.” Items are responded to using a six-point scale ranging from 0 (“disagree strongly”) to 5 (“agree strongly”). Glick and Fiske (1996) found that the overall internal consistency for the ASS is .90, the HS subscale was .89 and .83 for BS. The convergent and discriminant validity of the ASS scale was found to be good (see Glick & Fiske, 1996). In this study, relevant items (item 3, 6, 7, 13, 18 and 21) were reversed scored before any analysis was done using the scale. The reliability coefficient for the HS scale was .47. To improve the alpha, item 18 was deleted following the item-to-total correlation analysis; the alpha then improved to .55. The reliability of the BS was $\alpha = .53$. The total reliability coefficient for the scale was .55.

6.4.4 **The Adversarial Heterosexual Sexual Beliefs Scale (AHSBS)**

The AHBS is a 15 item measure developed by Lonsway and Fitzgerald (1995). It is commonly used to assess the degree to which participants feel that the fundamental relationships between the sexes are antagonistic in nature. For

consistency with common parlance, adversarial heterosexual beliefs are simply called adversarial sexual beliefs (ASB) in the present study. Each item is rated on a 7-point Likert-type scale, with response options ranging from “strongly agree”, “moderately disagree”, “disagree”, “neither” “agree nor disagree”, “agree”, and “moderately agree” to “strongly disagree”. While 12 items are phrased to reflect adversity in heterosexual relationships, three are not and therefore, have to be reverse scored. According to Lonsway and Fitzgerald (1995), the AHBS had a reliability of α = .78 and a good concurrent validity (see also Loh, Gidycz, Lobo & Luthra, 2005). In the present study the Cronbach’s alpha was .71.

6.4.5 **The Revised Socio-Sexual Orientation Scale (SOI-R)**

The SOI-R (Penke & Asendorpf, 2008) was also used in this study and the description of the scale given in study one of the study still applies. The reliability coefficient obtained for the behaviour subscale was α = .83; attitudes’ subscale was α = .58 and the desire subscale was α = .82. The alpha coefficient of the global SOI-R in this study was found to be high (α = .86).

6.5 **Preliminary analysis of the data**

6.5.1 **Introduction**

SPSS version 24 was used to conduct preliminary analyses. Correlation analysis was used to determine the association between the measures of the dark tetrad personality types to ASB, ambivalent sexism and socio-sexuality. Following that, a t-test analysis was conducted to compare the mean scores of male and female participants on all the major scales used in the study.

6.5.2 The correlation between the dark tetrad personality types, ASB, ambivalent sexism and socio-sexuality

According to Table 7, the results showed that all the dark tetrad personality types were related to several sexuality scales. Machiavellianism was related to SOI-R behaviour and desire subscales; narcissism and sadism were related to all SOI-R subscales ($p \leq 0.05$); with the later personality on SOI-R behaviour only being marginally statistically significant ($p \leq 0.10$). While psychopathy was only related to SOI-R attitude and desire subscales ($p \leq 0.05$). The dark tetrad personality types' association with ASB was only significant for Machiavellianism, sadism ($p \leq 0.05$) and marginally significant for psychopathy ($p \leq 0.10$). Additionally, only Machiavellianism, sadism and psychopathy were related to BS.

Table 7:

Correlation analysis of the dark tetrad personality types and sexuality

Variables		Machiavellianism	Narcissism	Psychopathy	Sadism
ASB[1]	*r*	0.239	0.089	0.102	0.191
	p	0.001	0.141	0.093	0.001
HS[2]	*r*	0.198	0.057	0.020	0.041
	p	0.001	0.342	0.735	0.494
BS[3]	*r*	0.200	0.077	0.165	0.313
	p	0.001	0.204	0.006	0.001
SOI-R[4] Attitude	*r*	-0.056	0.169	0.629	0.461
	p	0.354	0.005	0.001	0.001
SOI-R[4] Behaviour	*r*	0.216	0.378	0.062	0.109
	p	0.001	0.001	0.303	0.072
SOI-R[4] Desire	*r*	0.199	0.178	0.409	0.163
	p	0.001	0.003	0.001	0.007

Note: *$p \leq 0.05$, **$p \leq 0.01$

ASB = adversarial sexual beliefs; BS = benevolent sexism; HS = hostile sexism; SOI-R = revised sexual orientation inventory.

6.5.3 **Gender differences on the dark tetrad personality types, ASB, ambivalent sexism and socio-sexuality**

The t-test results as shown in Table 8, showed that males and females scored differently on the dark tetrad personality types, namely, narcissism (*t = 3.046*, *df = 238.231, p = 0.003, Cohen's d* = 0.375), psychopathy (*t = 4.797, df = 219.092, p < 0.001, Cohen's d* = 0.539) and sadism *(t = 5.126, df = 208.538, p < 0.001, Cohen's d* = 0.636*).* However, no significant difference was achieved on the two sexes on the Machiavellianism subscale (*t = -0.602, df = 252.753, p = ns, Cohen's d* = -0.075). The same applied on the HS subscale (*t = 1.583; df = 255.568, p = ns, Cohen's d* = 0.197), significance was only achieved on BS subscale *(t = -2.357; df = 240.499; p = 0.019 Cohen's d = 0.197*). Additionally, the results revealed that male and female scored differently on the SOI-R. The two sexes differed on the SOI-R behaviour (*t = 2.462, df = 238.220, p = 0.014 Cohen's d* = 0.302) and attitude (*t = 5.571, df = 235.077, p < 0.001, Cohen's d* = 0.862) components.

Table 8:

Comparison of males and females on the dark tetrad personality types, ASB, ambivalent sexism and socio-sexuality (N = 275)

Variables	*Gender*	$\bar{X}$	*SD*	*t*	*df*	*p-value*	*Cohen's d*
Machiavellianism	Male[1]	31.90	4.501	-0.602	252.753	0.547	-0.075
	Female[2]	32.27	5.189				
Narcissism	Male [1]	31.62	4.194	3.046	238.231	0.003	0.375
	Female [2]	30.01	4.382				
Psychopath	Male [1]	23.64	5.653	4.797	219.092	0.001	0.593
	Female[2]	20.44	5.253				
Sadism	Male [1]	20.00	6.653	5.126	208.538	0.001	0.636
	Female[2]	16.11	5.795				
ASB	Male[1]	67.79	9.471	-0.637	247.703	0.525	-0.078
	females[2]	68.58	10.533				
HS	Male[1]	33.03	5.656	1.583	255.568	0.115	0.197
	Female[2]	31.80	6.662				
BS	Male [1]	34.76	6.711	-2.357	240.499	0.019	-0.291
	Female[2]	36.78	7.115				
SOI-R Behaviour	Male[1]	10.41	2.135	2.462	238.220	0.014	0.302
	Female[2]	9.75	2.231				

Variables	*Gender*	$\bar{X}$	*SD*	*t*	*df*	*p-value*	*Cohen's d*
SOI-R Attitude	Male[1]	8.52	2.444	5.571	235.077	0.001	0.862
	Female[2]	6.39	2.504				
SOI-R Desire	Male[1]	9.72	2.130	1.234	236.020	0.218	0.153
	Female[2]	9.39	2.195				

Note: [1]Male = 109, [2]female = 166, ASB = Adversarial sexual beliefs, HS = Hostile sexism, BS = Benevolence sexism, SOI-R = revised sexual orientation inventory.

6.6 Main analysis

6.6.1 Introduction

The SEM path analysis with ML estimation was conducted using AMOS 24.0. The validity of the structural models was tested based on the statistical significance of the path coefficients (direct and indirect) and overall model fit. The mediating effects of intervening variables were examined for significance using bootstrap estimation. Bootstrap is a method for estimating the variance of an estimator and for finding approximate confidence intervals for parameters (Arbuckle, 1999; Byrne, 2010; Henderson, 2005). The bootstrap sample of 1000 was used in order to obtain an accurate estimation of the critical value and percentile.

Additionally, the moderating effects of gender were evaluated using multi-group analysis (Edwards & Lambert, 2007; Rigdon, Schumaker, & Wothke, 1998; Wegener & Fabrigar, 2000). According to Arbuckle (1999), multi-group analysis is a statistical technique used to test for pairwise path coefficients differences. Arbuckle further argues that the general procedure in multi-group analysis is to test measurement invariance between the unconstrained model for all groups combined, then for a model with constrained parameters (parameters are constrained to be equal between the groups). If the chi-square difference statistic is not significant between the original and constrained models, it means that the model has measurement invariance across groups. In the current study, both pair-wise comparisons (i.e., critical ratios for differences [critical value of 1.96, $p < 0.05$]) and the difference in the Chi-square value between the constrained and unconstrained models (≥ 3.84) were used to test the significance of the moderation effects.

6.6.2 Hypothesis 1: ASB and ambivalent sexism mediated associations between the dark tetrad personality types and socio-sexuality

The proposed structural model hypothesized that the relationship between the dark tetrad personality types and socio-sexuality would be mediated by ASB and ambivalent sexism. The model fit results for the mediated associations are presented in table 9. The results revealed significant associations between Machiavellianism and ASB (β = 0.248, *p* = 0.000), psychopathy and ASB (β = 0.153, *p* = 0.021), sadism and ASB (β = 0.202, *p* = 0.002), Machiavellianism and BS (β = 0.187, *p* = 0.002); sadism and BS (β = -0.276, *p* = 0.000), and Machiavellianism and HS (β = 0.239, *p* = 0.000). There were also significant associations between SOI-R behaviour and ASB (β = 0.258, *p* = 0.001), SOI-R attitude and ASB (β = 0.146, *p* = 0.016), SOI-R desire and ASB (β = 0.217, *p* = 0.001), SOI-R behaviour and BS (β = -0.234, *p* = 0.001), and SOI-R desire and BS (β = -0.154, *p* = 0.005).

Additionally, the results showed that the associations between narcissism and BS (β = 0.058, *p* = 0.348), and psychopathy and BS (β = -0.044, *p* = 0.523), were not significant. The results further suggest that BS fully mediated the association between sadism and SOI-R (behaviour and desire), Machiavellianism and SOI-R (behaviour and desire), while ASB fully mediated the association between sadism and the overall SOI-R (behaviour, attitude and desire), Machiavellianism and SOI-R (behaviour, attitude and desire), and psychopathy and SOI-R (behaviour, attitude and desire). Hypothesis no 1 predicted that ASB and ambivalent sexism will mediate the associations between the Dark Tetrad personality types and socio-sexuality. However, ASB and BS only mediated three of the dark personality types with socio-sexuality.

Table 9:

ASB and ambivalent sexism mediated associations between the dark tetrad personality types and socio-sexuality

	χ^2	*Df*	*CFI*	*TLI*	*RMSEA*	*90% RMSEA CI*
Model	25.325	20	0.989	0.975	0.032	0.00, 0.065

Note. $p > 0.05$; χ^2 = Chi-square test; df = degrees of freedom; CFI = Comparative Fit Index; RMSEA = root mean square error of approximation; 90% RMSEA CI = the root mean square error of approximation's 90% confidence interval; TLI = Tucker-Lewis index.

6.6.3 Hypothesis 2: Gender moderates the ASB and ambivalent sexism mediated association between the dark tetrad personality types and socio-sexuality

A multi-group analysis was conducted to examine if the specific estimated parameters/paths differed across the groups. The pair-wise comparisons (i.e., critical ratios for differences [critical value of 1.96, $p < 0.05$]) of the parameters in the model are as follows: the path between narcissism and BS is not statistically significantly different across the groups (Z = -0.791; $p > 0.05$), psychopathy and ASB is not statistically significantly different across the groups (Z = 1.846; $p > 0.05$), sadism and ASB is statistically significantly different across the groups (Z = -2.041; $p < 0.05$), Machiavellianism and BS is not statistically significantly different across the groups (Z = -0.408; $p > 0.05$), Machiavellianism and ASB is not statistically significantly different across the groups (Z = 1.012; $p > 0.05$), Sadism and BS is not statistically significantly different across the groups (Z = - 0.315; $p > 0.05$), psychopathy and BS is not statistically significantly different across the groups (Z = -0.721; $p > 0.05$), ASB and SOI-R desire is not statistically significantly different across the groups (Z = -0.889; $p > 0.05$), BS and SOI-R behaviour is not statistically significantly different across the groups (Z = 1.919; $p > 0.05$), BS and SOI-R desire is not statistically significantly different across the groups (Z = -0.214; $p > 0.05$), ASB and SOI-R attitude is statistically significantly different across the groups (Z = -2.610; $p < 0.05$), and ASB and SOI-R behaviour is statistically significantly different across the groups (Z = -2.250; $p < 0.05$). The results suggest that paths between sadism and ASB, ASB and SOI-R attitude, ASB and SOI-R behaviour are not equal across gender groups. That is, gender only moderates the ASB mediated associations between sadism and SOI-R behaviour, and sadism and SOI-R attitude.

A further analysis comparing male and female participants was conducted. The model fit comparison across gender groups and chi-squared difference test confirms the results of the critical ratios for differences. The moderation test was

found to be significant in the female group as a result of the difference in the Chi-square value between the constrained and unconstrained models (> 3.84) but not significant in the male group. The results are presented in table 10 and 11.

Table 10:

Moderation tests for the female group (n = 161)

	Model	χ^2	*Df*	*CFI*	*GFI*	*RMSEA*	*90% RMSEA CI*	*Model comparison*	*Δ x²*	*Results on moderation*
1.	Constrained	88.59	38	0.92	0.96	0.06	0.04, 0.07			
2.	Unconstrained	19.52	18	0.99	0.97	0.02	0.00, 0.08	1 vs. 2	29.07	Significant

Note. $p < 0.001$; χ^2 = Chi-square test; df = degrees of freedom; CFI = Comparative Fit Index; RMSEA = root mean square error of approximation; 90% RMSEA CI = the root mean square error of approximation's 90% confidence interval; GFI = Goodness-of-fit index; Δx^2 = Chi-square difference value.

Table 11:

Moderation tests for the male group (n = 108)

	Model	χ^2	*Df*	*CFI*	*GFI*	*RMSEA*	*90% RMSEA CI*	*Model comparison*	*Δ x²*	*Results on moderation*
1.	Constrained	27.75	19	0.95	0.95	0.06	0.00, 0.11			
2.	Unconstrained	25.12	18	0.96	0.95	0.06	0.00, 0.11	1 vs. 2	2.63	Not significant

Note. $p < 0.001$; χ^2 = Chi-square test; df = degrees of freedom; CFI = Comparative Fit Index; RMSEA = root mean square error of approximation and its 90% confidence interval; GFI = Goodness-of- fit index; Δx^2 = Chi-square difference value.

6.7 **Summary of chapter**

This chapter provided the general overview of the second study. The research methodology in terms of description of the population, data collection methods and procedures were discussed. Additionally, preliminary and main analyses of the data were presented.

CHAPTER SEVEN
DISCUSSION

7.1 Introduction

The present study was aimed at investigating the mediating role of ASB and ambivalent sexism in the associations between the Dark Tetrad personality types and socio-sexuality. It further evaluated the moderating role of gender in the model. This chapter discusses the findings by integrating them with the available literature. The results are organized according to the hypotheses advanced. The meaning and implications of the results, and the congruence or lack thereof with the results of other studies, are all explored.

7.2 Associations between the dark tetrad personality types and sexuality

Researchers have identified a “dark core” feature of the dark tetrad personality types (Bertl, Pietschnig, Tran, Stieger, & Voracek, 2017; Paulhus, 2014). The dark core reflects itself in matters of sexuality or sexual behaviours. With regards to sex and relations with sex partners, dark tetrad personality types tend to engage in short-term sexual relationships (Jonason et al., 2009; Jonason et al., 2010; Jonason et al., 2011). Their overarching style and/or approach in sexual relationship is influenced by lack of sensitivity accompanied by the desire to obtain immediate or short-term gratification, especially among men (Jonason et al., 2009; Jonason et al., 2010). Nonetheless, the results of the current study reflect aspects of the dark tetrad personality types that set them apart.

Although all the dark tetrad personality types have callousness as their defining attribute, they each have unique profiles (Marcus et al., 2018; Paulhus, 2014). For instance, their relationship to factors of sexual relations reflects their individualized characters. Preliminary analysis found that while Machiavellianism was associated with ASB and both components of ambivalent sexism (HS and BS), narcissism

was not related to these variables. Thus, the results of the current study indicate that while negative, antagonistic beliefs are an essential component of mating strategy for Machiavellians (McHoskey, 2001), they do not serve the same purpose for narcissists. The latter are found to favour communion in their relations with others, seeking to dominate by persuasion rather than coercion (Rauthmann, & Kolar, 2013). Narcissists are more inclined to seek and expect admiration from sexual partners, and will only develop and enact antagonistic attitudes and behaviours in the event that such admiration is not forthcoming (cf. Paulhus, Curtis, & Jones, 2018). In fact, narcissists will use coercion, a most likely consequence of HS, only when their ego or self-esteem is threatened (Bushman, & Baumeister, 1998; Bushman et al., 2003; cf. Paulhus et al., 2018). In sexual relations, available evidence suggests that narcissists do not require to use coercive or antagonistic tactics since they appear to be the most adaptive, sexually preferred, and indeed successful personality types (Marcinkowska, Helle, & Lyons, 2015; Rauthmann, & Kolar, 2013; Westhead, & Egan, 2015).

On the other hand, psychopathy and sadism were not associated with HS, but were related to BS. On face value, this may suggest that psychopathic and sadistic personalities prefer to focus on rewarding compliance with traditional gender roles (BS) rather than seeking to punish failure to comply (HS) (see Glick & Fiske, 2011; p. 5). However, the fact that they are also associated with ASB (notwithstanding the marginal association of psychopathic personality with the [ASB] variable) implies that they use BS to maintain a state of affairs which favours their dominance and upper hand in heterosexual relationships. This is a characteristic they share with Machiavellianism, since the three personality styles are associated with ASB.

The results of correlation analysis also show, in line with existing research (Jonason et al., 2009), that by and large the dark tetrad personality types are positively associated with socio-sexuality. Narcissistic and sadistic personalities

are the only ones that are positively associated with all three components of socio-sexuality, although the latter's association with the behavior component is only marginal. Machiavellian personalities are not associated with the attitude component and psychopathic personalities are not related to the behaviour component. The last results are surprising because they are in contradiction to the defining characteristics of the personality types. Psychopathic personalities characteristically lack empathy and are emotionally cold, which means that they would have no qualms about engaging in non-committed, short-term sexual activity. Machiavellian personalities tend to be strategically manipulative, duplicitous, and less inclined to impulsivity (Jones & Paulhus, 2011b), implying that they have the capacity to develop and maintain socio-sexual attitudes. This is particularly so, especially because socio-sexual attitudes entail some valuation of the need for proximity prior to engagement in casual sex (Penke & Asendorpf, 2008).

7.3 ASB and ambivalent sexism mediated associations between the dark tetrad personality types and socio-sexuality

SEM path analysis was used to explore the predictions of the first hypothesis, namely, that ASB and ambivalent sexism would mediate the associations between the dark tetrad personality types and socio-sexuality. The results were almost identical to those of correlational analysis. The exception was the lack of link between psychopathy and BS. In any case the coefficient of the association between the two variables was, at r = .17, the smallest when the dark tetrad personality types were correlated with socio-sexuality.

The relationship between dark tetrad personality types and sexual behaviour commonly considered to be risky has been established over time. For instance, narcissistic personalities are not inclined to engage in long-term relationships, and are likely to engage in promiscuous sexual relations (Foster et al., 2006); and

Machiavellian personalities are more positive toward promiscuous sexual attitudes, and are more likely to engage in risky sexual behaviour (McHoskey, 2001). Nevertheless, the propensity of the dark tetrad personality types to engage in risky sexual behaviour, as reflected by socio-sexuality, is mediated by ASB and BS. It was specifically Machiavellianism and psychopathy's relationships with all dimensions of socio-sexuality that were mediated by ASB.

The mediational role of ASB in sadistic, Machiavellian and psychopathic personalities' relations with unrestricted, risky sexual behaviour reflects an aspect which until now was only attributed to the latter personality only. Adversarial tendencies in sexual relations are usually associated with psychopathic personality. The current results point to their possible usefulness in sadistic and Machiavellian personalities' inclination towards all aspects of socio-sexual orientation too (McHoskey, 2001). However, the mediational role of ASB and BS with regards to the relation between sadistic and Machiavellian personalities and the behaviour and desire components of socio-sexual orientation suggests a possible mixture of styles. Coercion and inveigling are used conjointly to dominate. In Machiavellian personality this was called a 'bistrategic' behavioural approach (Hawley, 2003; cf. Jones & Paulhus, 2009).

7.4 Gender moderation on ASB mediated association between the dark tetrad personality types and socio-sexuality

A moderator role of gender was detected in this study. The ASB mediated associations between sadism and SOI-R behaviour, and sadism and SOI-R attitude were moderated by gender. Research linking men's and women's sadistic personality to adversarial beliefs and behaviours (e.g., rape myth acceptance, hostility and/or aggression towards women) is emerging (Buckels et al., 2013; Russell & King, 2016, 2017). The present results add to Russell, Doan, and King's (2017) recent findings, which established gender differences on ASB mediated

associations between sadistic personality and sexuality. In Russell et al. sadism was indirectly linked to sexual violence through adversarial sexual attitudes among women. A recent study found that women's sadistic personality link to ASB (i.e., rape myth acceptance and hostility towards women) seem to be a possible enjoyment of others pain which leads to intra-sexual competition (Russell & King, 2017).

7.5 Summary of chapter

This chapter discussed the study findings. First, correlations between the variables of the study were presented. Each of the dark tetrad personality types had a unique relationship to sexuality variables, namely, ASB and both components of ambivalent sexism (HS and BS). The dark tetrad personality types were also largely associated with socio-sexuality. Next, the chapter presented findings regarding the mediation role of ASB and components of ambivalent sexism. The results of mediation analysis confirmed that each of the dark tetrad personality types uniquely related to sexuality variables, as observed in correlational analysis. ASB and BS were mediators of the relationship between dark tetrad personality types and socio-sexuality. Finally, the moderation role of gender on ASB and ambivalent sexism mediated association between the dark tetrad personality types and socio-sexuality was explored. Gender moderated the associations between sadistic personality and ASB, ASB and SOI-R attitude, ASB and SOI-R behaviour. The next chapter will present the general conclusion of the two studies, and also present conclusions, overall limitations, and recommendations.

CHAPTER EIGHT

GENERAL DISCUSSION, CONCLUSIONS, IMPLICATIONS, LIMITATIONS OF THE STUDY, AND RECOMMENDATIONS

8.1 General discussion

The current research investigated the dark tetrad personality type's sexual behaviours using a student sample. Two studies were conducted and differed mainly because the second study maintained socio-sexuality and included ASB and ambivalent sexism as mediation variables. Nonetheless, gender was used as a moderating factor in both studies. Measures of Machiavellianism and narcissism had low Cronbach alphas which were inappropriate to conduct analysis with; still they were in each instance retained because they measured important variables in the study.

In general, this study shows how uniquely the dark tetrad personality types pan out their sexual behaviours and attitudes in social context. Studies explain that dark personality type's inclination to pursue sexual behaviours reflects their exploitative and ruthless behavioural style that is characterized by callousness, self-beneficial and manipulative behaviours (Jones & Paulhus, 2010; Paulhus & Williams, 2002; Jonason et al., 2009). Considering the lack of affect and antagonistic nature of the dark tetrad personality types, it is not surprising to see some of the personalities related to sexual behaviours. Available evidence highlights that emotional detachment and lack of empathy of the dark personalities enable active sexual exploitation of others with little or no emotional consequence (Pajevicc, Vukosavljevic-Gvozdena, Stevanovica, & Neumann, 2018; Mealey, 2005). The overall results in this study show Machiavellianism, sadism and psychopathy dominating in their association to factors of sexual relations. The results partly agree with available literature on the relationship between the dark tetrad

personality types and sexual behaviours (Foster et al., 2006; Jonason et al., 2009; Jones & Paulhus, 2010).

The first study revealed that only sadism was associated with infidelity and desire component of socio-sexuality. Yet, in the preliminary analysis, psychopathy and sadism were positively related to infidelity, sexual aggression and the socio-sexual orientation components. The current trend in literature show that sadism and psychopathy are theoretically, clinically and empirically linked in the mating context, especially because of their exploitative and pleasure-driven nature (Guay & Knight, 2006; Porter & Woodworth, 2006). As it is also observed in the second study, when ASB served as the mediator, again the two personality types (namely sadism and psychopathy) with SOI-R. Additionally, ASB mediated the association between Machiavellianism and SOI-R. The fact that the nature of Machiavellianism is manipulation and exploitation which also forms a definition of ASB would perhaps account for the present results. Therefore, it is not surprising that ASB mediated the association of the three personalities with socio-sexuality since they share the characteristics of manipulation and exploitation. Seemingly, Psychopathy, sadism and Machiavellianism lack understanding of other's emotions (Pajevic et al., 2018) which contributes to their successful pursuit of unrestricted, risky sexual behaviour. Another recent study emphasize a link of ASB with sexual violence and rape myth acceptance (Russell et al., 2017) which perpetuate sexual exploitation and manipulation. This is consistent with a study that found the three personalities use manipulation and hard tactics to obtain sex (Jonason et al., 2012). Hence, the mediation of ASB on the three personality types with socio-sexuality.

The results further showed that BS fully mediated the relationship between sadism and SOI-R (behaviour and desire), Machiavellianism and SOI-R (behaviour and desire). The fact that Machiavellianism engage in sexual behaviours in order to attain a specific reward and sadism for power and dominance. It would explain the

reason the two personality types use BS, as it offer paternalistic protection and complimentary roles (see Lemus et al., 2010). That is, Machiavellianism and sadism use BS as a means to maintain dominance in sexual relationship, which is also linked with coercion (Cleveland & Koss, 1997). This study showed that HS component of ambivalent sexism did not mediate the association between all the dark personality types and sexual behaviours. The results unraveled in this manner despite the fact that Machiavellianism was the only personality type related to HS component in the preliminary analysis. However, Lee et al. (2010) explain that HS is reserved for those who challenge prescribed gender roles and threaten male dominance. This means that the dark personality will not show HS towards individuals/ sexual partners who accepts patriarchal culture or traditional gender roles. Perhaps the aforementioned statement explain the lack of HS' mediation role on the dark personality types and socio-sexuality. The lack of association on narcissism personality with all sexual behaviours in the current study was of concern. However, the results emphasize that narcissists are socially desirable and adaptive within this sample. Jonason et al. (2012) reason that narcissists use soft tactics which make them preferable in sexual relations. Jones and Paulhus (2014) also confirm that narcissists are different from the other dark personalities because of their self-promoting behaviour motivated the need for ego-reinforcement. The need for ego-reinforcement or admiration from sexual partners has perhaps contributed to narcissists' lack of pursuit of exploitative sexual behaviours in this sample. Nevertheless, the findings strengthen previous researchers' argument that narcissism is a less malevolent compared to other dark personality types (Pajevicc et al., 2018) and possess positive virtues (Egan, Chan, & Shorter, 2014; Rauthmann, & Kolar, 2013).

Gender also played an essential role in the present study, although it did not moderate all the dark personality types' sexual behaviours like in many personality studies (Buss & Schmitt, 1993; Jonason et al., 2010; Paulhus & Williams, 2002). However, the finding confirms previous researchers' argument that gender

differences in most personality traits are not uniform in magnitude across all samples (Guimond et al., 2007; Schwartz & Rubel, 2005). Thus, at times, gender differences can be much larger in some cultures than in others. Consistent with the aforementioned findings, the effect size of Cohen's d statics in this study expressed small gender differences. In support of the present findings, Schmitt, Realo, Allik and Veracek (2008) found that in both self-report and other-report data, African cultures generally show the smallest sex differences. A recent study found that smaller gender difference in dark personalities is found in less gender egalitarian cultures (Schmitt et al., 2016). This could suggest that in this sample the students still embraced their traditional gender roles, which is consistent with the African culture were individuals are still expected to function within their prescribed gender roles in sexuality (Hooks, 2004; Wallace; 2007), which could account to the small size of gender difference. Additionally, this study strongly highlighted the existence of the dark personality types in women in the mating context. The results supports the observation of Honey (2017)(cf. Semenyna, Honey, & Belu, 2017) who indicated that there is an increased attention on the manifestations of dark personality types in women and how they facilitate resource acquisition and desirable mating opportunities. Perhaps the fact that the sexual aggression was not a significant variable in this study could be the fact that women are more likely to seek influence in more communal or at least less overt and aggressive ways (Budworth & Mann, 2010; Buss, 1981; Eagly & Karau, 1991; Rosette & Tost, 2010, cf. Semenyna & Honey, 2015). Conclusively, the overall results in this study did not conform largely to the available literature. Nevertheless, the results do reveal individual differences in personality traits and sexual behaviours within the African population.

8.2 **Conclusions**

The current study has shown that each of dark tetrad personality types has a unique relationship to factors of sexual behaviours. The antagonistic behavioural

style shared by the dark tetrad personality to dominate others in sexual relationships reflects their “true dark” core. As such, it was not surprising to see some of the dark personality types related to factors of sexual behaviours. Since a robust correlation between dark tetrad personality types with socio-sexuality was predominantly evident. The findings which were accounted for when mediator variables were introduced. However, the fact that the dark tetrad personality types did not relate to all sexual behaviours, contradicts available literature (Jonason et al., 2010; Paulhus & Williams, 2002). While, the villainous sadism has strongly asserted its position in the dark personality framework following the current results. Accordingly, this study do support the inclusion of sadism on the dark personality type framework. This study also showed the manifestation of the dark tetrad personality in females in matters of sexuality. The results were also confirmed in the mediation analysis. It is noteworthy that females with dark tetrad personality types are increasingly engaging in sexual behaviours, as it is commonly males’ strategy (see, Jonason et al., 2009). Studies argued that males with dark personality types prefer short-term mating strategy because it benefit their reproductive fitness than women’s (Jonason et al., 2011; Schmitt et al., 2001). However, Carter et al. (2014) explain that women’s preference for short-term relationships may be a form of intra-sexual competition whereby sex is used to reduce the competition. Accordingly, this study highlight the need to study males and females separately in order to have an insightful role of gender in personality studies. The assertion that dark tetrad personality types plays out differently in males and females, has been defensible (Lippa, 2009, 2010; Schmitt et al., 2016; Smoker & March, 2017). Additionally, the use of the integrative approach has assisted in understanding /reflecting the “dark” traits of the dark personality types. Although, the weakness of the theoretical models used to represent the integrative approach in the present is that they only show the “darkness” of the dark personality types without a deep structure of were behaviour is derived from. Nonetheless, this study do add to the body of knowledge on dark tetrad personality types, despite the inconsistencies with available literature. Therefore, conflicting

findings arising from this study with available literature suggest gaps which need to be explored in the future.

8.3 Implications of the current study

The present results indicate that the dark personality types are characterized by callousness, promiscuity, desire for dominance and manipulative social style which enable them to facilitate exploitative sexual behaviour. The aforesaid traits have serious implication for organizational, educational, clinical and social psychology. The fact that dark personality types engage in risky unrestricted sexual behaviours raises serious negative health consequences such as contraction of HIV/AIDS and STI's. Additionally, their manipulative and exploitative nature in sexual relations due to their need for dominance leads to sexual violence and bullying of others. Other studies found that the undesirable behaviour of the dark personality types extends to the workplace (Babiak, 1995; Dotlich & Cairo, 2003; Furnham, 2010; Hogan & Hogan, 2001, cf. Furnham et al., 2013). Therefore, increasing knowledge and understanding of the dark personality types in the organizational, educational and social context informs preventative measures. Results of the present study could be used to educate students and educators in the learning environment, individuals in society and workplace about characteristics of the dark personality types, their motives and gains (e.g power or dominance over others). By defining the dark side and recognizing the motive of their behaviours it can empower other students and to also strictly use contraceptives without adhering to the manipulation of the dark personalities. It's also important for educational and organizational places to have policies and campaigns that strongly deal with sexual violence, bullying and aggression. Especially, when there is a culture of sexual entitlement amongst individuals with dark personality types which perpetuate sexual exploitation and manipulation.

The fact that dark personality types' socio-sexuality is mediated by ASB and BS, implies that they use BS to maintain and establish dominance in sexual relationships. That is, the perceived threat of their dominance, results in coercion or antagonistic tactics in heterosexual relationships. Previous findings agree that risk factors for relationship violence include gender disparity, physical aggression, hostility, experiencing child abuse and domestic violence, and history of partner violence (Burt, 1980; Cowan, 2000; Chen & White, 2004; Gallagher, 2011; White & Smith, 2009). Glick and Fiske (2001) contend that BS as a component of sexism is strongly related to gender inequality within societies and reinforces the traditional stereotyping and masculine dominance which is often damaging in relationships. This raises a serious concern in a society like South Africa were at the dawn of democratization it has prioritized gender equality. The fact that women in this sample endorses BS to be protected from male hostility in sexual relationships, is worrisome. Also the support of adversarial beliefs in heterosexual relationships which justifies the behaviour as manipulative and reinforces the culture of violence and rape is of concern. The endorsement of ASB and BS by the dark personality types in sexual relations is a serious problem with dire consequences for the organizational, educational and social context.

Therefore, this results suggests the need for strong measures in dealing with rape or sexual violence culture enabled by ASB and BS attitudes to avoid the normalcy of culture in society. Additionally, education on gender roles or expectations to ensure equality is needed to avoid wrong preconceived ideologies or beliefs on each gender which perpetuate violence or exploitation. Additionally, policy makers should consider the findings of the present study especially on sexuality and gender based policy reviews. The fact that the present study indicate small gender differences, reflects less egalitarianism on gender related matters in a South African context. Lastly, clinicians treating adolescents, students, individuals in the workplace or society with antagonistic behaviours should be aware of the possible

comorbid of dark personality types which could compromise the therapeutic process.

8.4 Limitations of the study

The current study was subjected to a number of methodological limitations. One of the noteworthy limitations was the use of self-report measures to determine dark tetrad personality types' sexual behaviours. Therefore, data was susceptible to the risk of random or bias response against socially undesirable traits which was unavoidable. Importantly, studies on dark personality types should adopt measures that move beyond self-reports. The current study was cross-sectional or correlational in nature leading to determinant factors highly speculative. For example, it cannot be determined whether dark tetrad personality types or sexual variables operate as a causal factors given the present findings.

Additionally, this study used a student sample from two universities in Limpopo Province, which limits generalizability of the results. Moreover, the convenience sampling method used in this study raises additional caution against generalizability. Since participation was based on availability and not everyone was given an equal chance to be included in the study. The ethnic composition of the current sample does not reflect a more diverse culture of an African population. This is based on the fact that the Venda and Sotho population were the highest compared to other ethnic backgrounds.

The other notable limitation relates to the low levels of reliability coefficients on various measures used in the studies, namely, Machiavellianism, narcissism and HS. The failure of narcissism to act as a strong predictor of sexual behaviours might be symptomatic of its psychometric problem of internal consistency. Similarly, HS was susceptible to the same psychometric limitation. A possible consequence of low reliability in measurement is correlations of smaller magnitude

or non-significant correlations. Regardless of the limitations, the study provided robust tests on the evaluation of dark tetrad personality types' sexual behaviours; with the latter using three sexual scales and two sexism scales. Thus, this study seeks to encourage detailed, rigorous and critical assessment of the dark tetrad personality types in relation to sexual behaviours.

8.5 **Recommendations**

The current study suggests potentially new interesting avenues of research to explore in future studies. The use of observational methods, collateral reports or laboratory experiments to investigate the dark tetrad construct may yield additional insight on the construct in an African context. The current study, like most studies have relied exclusively on the self-report measures of dark tetrad personality types (see, Brewer et al., 2015; Jakobwitz & Egan, 2006; Jonason et al., 2010). The inclusion of other-informant reports may be a one strategy to circumvent response biasness.

Future studies may sample within a more diverse set of culture to strongly establish generalizability. Replication of this study in the future would be beneficial by using more rigorous sampling method, adding other mediation variables associated with sexual behaviours. To enhance equal representation of participants and strengthen the understanding of the dark tetrad personality types' sexual behaviours. Perhaps the application of different or non-sexual variables in a student/general population may yield more fruitful insights on the wide array of individual difference that exists on the dark tetrad personality types. Although, there is need for studies to use a general population, so that researchers may no longer rely largely on student samples, which is presently a common practice in the 'dark tetrad' research.

The use of longitudinal or experimental designs will benefit future studies to clarify the effect of causality factors in studies similar to the current one. The reason is that conclusions regarding causation cannot be drawn with the use of cross-sectional or correctional design with regard to cause-effect relations. To some extent, the causality issue is obscured in which the dark tetrad personality types serve as predictors and other variables (e.g., sexual behaviours) as criterion. Thus, it will be important to move away from cross-sectional to longitudinal or experimental approaches, to determine if the dark tetrad personality types are causal antecedents of transgressive/antagonistic sexual behaviours.

Future studies can also benefit from measures with large psychometric properties when assessing the dark tetrad personality types regardless of culture or language they are administered in. Thus, measures with more items may provide high reliability. Additionally, separate analyses of males and females, instead of statistically controlling for gender effect can immensely contribute to literature. The manifestation of the dark tetrad personality types in females warrants additional attention in the development of knowledge.

8.5 **Summary of the chapter**

Discussion and elucidation of the overall data was given in this chapter. Moreover, some of the possible limitations which might have affected the current study were highlighted. The chapter also provided conclusions, implications regarding the study and recommendations which offers direction for future studies.

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APPENDIX A: ETHICAL CLEARANCE CERTIFICATE

University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: anastasia.ngobe@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE CLEARANCE CERTIFICATE

MEETING:	05 September 2018
PROJECT NUMBER:	TREC/142/2018: PG
PROJECT:	
Title:	Dark Tetrad Personality Types and Sexual Behaviour Amongst African Students.
Researcher:	V Baloyi
Supervisor:	Prof S Mashegoane
Co-Supervisor/s:	N/A
School:	School of Social Sciences
Degree:	PhD Psychology

PROF TAB MASHEGO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

Note:
i) **Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.**
ii) **The budget for the research will be considered separately from the protocol.**
PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

APPENDIX B: LETTER REQUESTING ACCESS TO INSTITUTIONS

Department of Psychology
School of Social Sciences
Faculty of Humanities
University of Limpopo
University Road
Mankweng, Polokwane

Request to conduct research in your institution

My name is Valeria Baloyi, a Doctor of Philosophy in Clinical Psychology student at the University of Limpopo. I am required to conduct and complete an extensive study and write a dissertation for the qualification. My study requires cooperation and involvement of students. I am requesting access to students in your institution, whom I will request to participate in my study.

The study investigates the relationship between so-called dark personality types and sexual behaviours amongst African students. Please receive a copy of my research proposal, which includes: (1) actual versions of the data collection instruments, (2) a prototype of a consent form, and (3) a copy of the approval letter issued by the University of Limpopo, Turfloop Campus Research and Ethics Committee.

All rules pertaining to the ethical conduct of research will be observed. For instance, participants will be made aware that participation is voluntary, thus prompting all participants to sign a consent form before taking part. Furthermore, consent will be informed, in that students will be provided with a full explanation of the study and they will be permitted to ask questions for clarification. They will be made aware of their right to withdraw from the study unconditionally, and also the availability of intervention resources if they require them as a result of taking part in the study.

Upon completion of the study, I undertake to provide the institution with a bound copy of the full research report as well as the results of the study. If you require any further information, please do not hesitate to contact me on 073 7241 637 or email address: <twanibaloyi@gamil.com>. Inquiries can also be lodged with my academic dissertation supervisor, Prof S Mashegoane, at the following telephone or email addresses: 015 268 2317, or <solomon.mashegoane@ul.ac.za>.

Thank you in advance.

_____

V Baloyi (Researcher)

Appendix C1: Letter of invitation to participants

Discipline of Psychology
School of Social Sciences
Faculty of Humanities
University of Limpopo
University Road
Mankweng, Polokwane

Dear Prospective Participant.

My name is Valeria Baloyi. I am currently studying for a Doctor of Philosophy in Clinical Psychology with the Department of Psychology at the University of Limpopo. The title of the research I am conducting is: **The dark tetrad personality types and sexual behaviours among African students.** The research constitutes the main requirement for the completion of my Doctor of Philosophy degree.

Your participation in this study is voluntary. If you choose to participate, you will be required to complete a 10-page questionnaire. Prior to completing it, please read the instructions carefully. Where you do not understand, do not hesitate to ask for additional clarification. Also be aware that you have a right to terminate participation in the study without giving any reasons. Regarding confidentiality, you are not expected to write your name in any of the questionnaire pages. I request you to kindly fill in this questionnaire as accurately and carefully as you possibly can.

A complete list of issues I will take into account when conducting this study is attached. You are asked to read the attachment, and then sign a form to indicate that you have understood the requirements regarding this research, and that you

consent or dissent to participate. Please do not proceed to answer any of the study questions until you have signed the said form.

Thank you in advance for your cooperation.

APPENDIX C2: CONSENT FORM

Department of psychology
School of Social Sciences
Faculty of Humanities
University of Limpopo

PROJECT TITLE: Personality Styles and Sexual Behavior among African Students

PROJECT LEADER: VALERIA BALOYI

I, _____ hereby voluntarily consent to participate in the following project:

"PERSONALITY AND STYLE PREFERENCE OF ENGAGING SEXUAL BEHAVIOUR**"**

I realise that:

1. The study deals with the association of personality factors to how South African students prefer to approach and engage in sexual behaviour.
3. The Ethics Committee of the University of Limpopo has approved that individuals may be approached to participate in the study.
4. The research project, i.e. the extent, aims and methods of the research, has been explained to me.
5. I will be informed of any new information that may become available during the research that may influence my willingness to continue my participation.
6. Access to the records that pertain to my participation in the study will be restricted to persons directly involved in the research.
7. Any questions that I may have regarding the research, or related matters, will be answered by the researcher/s.

8. If I have any questions about, or problems regarding the study, or experience any undesirable effects, I may contact a member of the research team or **Ms Baloyi Valeria.**
9. Participation in this research is voluntary and I can withdraw my participation at any stage.
10. I indemnify the University of Limpopo and all persons involved with the above project from any liability that may arise from my participation in the above project or that may be related to it, for whatever reasons, including negligence on the part of the mentioned persons.

_____ _____

SIGNATURE OF RESEARCHED PERSON SIGNATURE OF WITNESS

_____

SIGNATURE OF PERSON THAT INFORMED THE RESEARCHED PERSON

Signed at _____, this ____ day of _____ 2015

APPENDIX D: MEASURES

Note: Measures, either than the self-created demographics questionnaire, are not reproduced in this thesis to protect the copyrights of the various authors, especially that the researcher does not have permission to reproduce and/or publish any of them.

SECTION A: DEMOGRAPHIC INFORMATION QUESTIONNAIRE

1. **How old are you?** ……. yrs. old.

2. **Are you male or female? (Choose one answer)**

Male		Female	

3. **Where do you live?**

Urban area		Peri-urban area		Rural area	

4. **Who are the adults you live with at home? (Circle only ONE of the alternatives)**

Biological mother and father		Biological mother and step-father	
Single mother		Biological father and step-mother	
Single father		Adoptive or foster parents	
Grandparents, without parents		Other (specify)	

5. **Which ethnic group do you belong to? (Choose one answer)**

Tsonga		Sotho		Venda		Other	

6. **What is your level of study?**

First level	Second level	Third level	Post-graduate

7. **What is your marital status?**

Married	Cohabiting	Single	Divorced	Separated	Widowed

8.

Mother's level of education	**Father's level of education**
(e.g., grade 1; Bachelor's degree)	(e.g., grade 1; Bachelor's degree)

9. **Taking your total family earnings and life style into account, how would you rate your family's social class? (Please select by ticking one option only)**

Working class	Lower Middle Class	Upper Middle Class	Upper Class