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Does the Dark Triad predict self-perceived attractiveness, mate value, and number of sexual partners both in men and women?

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Does the Dark Triad predict self-perceived attractiveness, mate value, and number of sexual partners both in men and women?

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Abstract

Previous literature has shown associations between the Dark Triad (i.e., narcissism, Machiavellianism, psychopathy), other-perceived attractiveness, and personality. Nevertheless, the study of the Dark Triad as predictor of traits related to sociosexual dynamics (i.e., self-perceived attractiveness, mate value, and number of sexual partners) still remain unknown. Hence, we aimed to fill this gap by assessing the relationship between these variables in a mixed-sex sample of young-adults. The results showed that: 1) narcissism and psychopathy, but not Machiavellianism, were positively correlated to number of sexual partners for the group of men and the group of women separately. 2) only narcissism was positively correlated to self-perceived attractiveness and mate value in both sexes. 3) narcissism successfully predicted higher self-perceived attractiveness and mate value both in men and women; whereas narcissism, psychopathy, and sex significantly contributed to the prediction of number of sexual partners. We discuss our results in the light of the interaction between evolutionary thinking and socioenvironmental factors.

Keywords: The Dark Triad; attractiveness; mate value; sexual partners; narcissism; Machiavellianism; psychopathy

Introduction

Since it has been suggested that the Dark Triad (DT) of personality may be interpreted as a facilitator for exploitative short-term mating strategies particularly in men (Jonason, Li, Webster, & Schmitt, 2009; Carter, Campbell, & Muncer, 2014), the interest among evolutionary researchers has increased. The DT of personality refers to features of non-pathological Machiavellianism, narcissism, and sub-clinical psychopathy, mainly related to other-derogation, antisocial tendencies, emotional coldness, aggressiveness, impulsivity, and self-promotion (Paulhus & Williams, 2002). In brief, Machiavellianism –commonly known as the manipulative personality– is focused on what will be beneficial for one’s well-being regardless of the well-being of others; narcissism focuses on inflated ego, vanity, exhibitionism, self-ascribed grandiosity, and self-sufficiency; whereas psychopathy is mostly associated with aggressiveness, lacking empathy, and impulsivity (Jones & Paulhus, 2011).

Despite the not so attractive characteristics that are associated with the DT traits; previous literature has reported small but reliable positive associations between physical attractiveness and some of the DT components such as narcissism (Holtzman & Strube, 2010) and psychopathy (Visser, Pozzebon, Bogaert, & Ashton, 2010). In general, it has been suggested that individuals with higher scores of the DT constellation may benefit under several social contexts such as mate choice and intrasexual competition (Jonason & Kavanagh, 2010; Borráz-León, Rantala, & Cerda-Molina, 2019; Lyons, Gillies, & Brewer, 2019). For example, Goncalves and Campbell (2014) stated positive correlations between the DT of personality and self-perceived mating success. Similarly, Carter et al. (2014), who created male characters designed to capture high DT facets of personality, observed that high DT characters were assessed as more attractive by women. Therefore, it has been hypothesized that the DT constellation could be evolutionarily advantageous by facilitating access to mates (Jonason, Lyons, & Blanchard, 2015). In fact, there is evidence suggesting

that some of the components of the DT are associated with honest indicators of developmental stability and physical attractiveness such as lower facial fluctuating asymmetry (Borráz-León et al., 2019), making the hypothesis about the evolutionary advantages of the DT of personality more plausible.

One of the main traits to be associated with physical attractiveness is mate value. Mate value is a theoretically quantified estimate of how valuable a person would be as a partner in a reproductive relationship (Sugiyama, 2005). Mate value reflects a comparison between a person's characteristics and characteristics valued by potential opposite-sex partners (Miner, Starratt, & Shackelford, 2009) such as physical and facial attractiveness (Little, Burt, & Perrett, 2006) or self-perceptions of mating success (Landolt, Lalumiere, & Quinsey, 1995). Since women are more valued for their appearance (e.g., Walter, Conroy-Beam, Buss, Asao, Sorokowska, Sorokowski, et al., 2020) it is possible to suggest stronger positive associations between self-perceptions of attractiveness and mate value for women than for men; whereas positive associations among these traits and number of sexual partners might be stronger for men than for women, probably due to the costs that women with multiple sexual partners are exposed to such as violence, infections, or bad social reputation (Buss & Schmitt, 1993; Buss & Shackelford, 1997; Reynolds, Baumeister, & Maner, 2018).

Recently, Zeigler-Hill and Trombly (2018) found positive associations between one of the components of the DT of personality (i.e., narcissism) and self-reports of mate value; whereas Jonason et al. (2009) found that high scores of the DT are associated with unrestricted sociosexual behavior in men. However, to our knowledge there are no studies that investigate whether the DT of personality may be a predictor of self-perceived attractiveness, mate value, and number of previous sexual partners both in men and women. Hence, in order to add relevant information to the existent body of knowledge related to this topic, the aim of this study was to investigate the relationships between each component of

the DT of personality, self-perceptions of attractiveness, mate value, and number of sexual partners in a sample of young men and women. According to previous literature reporting positive associations between narcissism, psychopathy, and physical attractiveness (e.g., Holtzman & Strube, 2010; Visser et al., 2010), we predicted that narcissism and psychopathy, but not Machiavellianism, will be predictors of self-perceived attractiveness, mate value, and number of sexual partners. Moreover, we predicted that this effect will be stronger for men than for women (Jones & Paulhus, 2010).

Methods

Participants

We recruited a group of 210 healthy college students (107 men and 103 women) at the University of Turku in Finland. The sample size was calculated with a confidence level of 95% according to Daniel (1982). The mean age was 22.93 years (SD = 4.55) for men and 21.16 years (SD = 3.08) for women. Participants received detailed information about the aim of the study following the approval of the appropriate local ethics committee, signed an online letter of informed consent, and answered a general data questionnaire that included: age, current marital status, and number of previous sexual partners. The participants did not receive any compensation for taking part in the research.

Self-perceptions of attractiveness

As it has been previously reported (e.g., Little, Burt, Penton-Voak, & Perrett, 2001), the question “How attractive do you consider yourself” was applied to measure self-perceived attractiveness using a 5-point Likert-scale to rate themselves upon (1 = low attractiveness, 3 = average attractiveness, 5 = high attractiveness).

Mate value measurement

Mate value was measured using the self-report Mate Value Scale (MVS) developed by Edlund and Sagarin (2014). This scale consists of 4 items (e.g., “Overall, how would members of the opposite sex rate your level of desirability as a partner on the following scale?”) with a 7-point Likert-scale to rate their mate value ranging from 1 = extremely undesirable to 7 = extremely desirable.

Measures of the Dark Triad of personality

The short Dark Triad questionnaire (SD3; Jones & Paulhus, 2014) was employed to measure Machiavellianism (e.g., “Make sure your plans benefit yourself, not others”), narcissism (e.g., “I like to get acquainted with important people”), and psychopathy (e.g., “People who mess with me always regret it”). The SD3 includes 27 items, nine for each trait. Volunteers indicated their level of agreement with each item using a five-point Likert-type scale (1 = strongly disagree; 5 = strongly agree). The accuracy and reliability of the SD3 are well established in the literature, including construct and external validation based on informant ratings (e.g., Jones & Paulhus, 2014). Volunteers responses to each item on the scale were averaged to create indexes of Machiavellianism ($M = 24.09$, $SD = 6.63$, $\alpha = 0.71$), narcissism ($M = 25.44$, $SD = 5.07$, $\alpha = 0.72$), and psychopathy ($M = 18.94$, $SD = 5.08$, $\alpha = 0.72$).

Statistical analyses

We used a t-test for independent samples to identify potential sex differences. Pearson correlations were used to reflect the relationships among the variables in the whole sample and in men and women groups separately. To test whether self-perceived attractiveness, mate value, and number of sexual partners are predicted by the independent variables (i.e., Machiavellianism, narcissism, psychopathy, and sex) we used a series of regression analyses that consecutively introduce one of the studied variables as a dependent variable (i.e., mate

value, attractiveness, number of sexual partners). The data were analyzed using SPSS version 25 (SPSS Inc., Chicago, IL, USA). All tests were two-tailed, and the significance was set at $p \leq 0.05$.

Ethical Note

The study adheres to the Declaration of Helsinki and was approved by the local Ethics Committee of the University.

Results

Sex differences

We found sex differences in the number of sexual partners, Machiavellianism, and psychopathy scores but not in self-perceived attractiveness, mate value, or narcissism scores (**Table 1**). Compared to women, men reported higher number of sexual partners, and scored higher in Machiavellianism and psychopathy.

Correlations

As it has been previously reported, we found significant positive correlations among the three components of the DT of personality –i.e., Machiavellianism, narcissism, and psychopathy– ($p < 0.001$ in all cases). Correlations between each component of the DT and self-perceived attractiveness, mate value, and number of sexual partners can be found in **Table 2**. In general, the number of sexual partners was positively correlated to each component of the DT (i.e., Machiavellianism, narcissism, and psychopathy) for the whole sample, whereas narcissism and psychopathy, but not Machiavellianism, were positively correlated with number of sexual partners for the group of men and the group of women separately.

Table 1. Sex differences in number of sexual partners, self-perceived attractiveness, mate value, and the Dark Triad of personality (n = 210: ♂ = 107 and ♀ = 103).

	Mean (SD)		t	p	Cohen's d
	Men	Women			
Number of sexual partners	6.17 (6.51)	3.57 (3.94)	3.507	0.001**	0.48
Self-perceived attractiveness	3.29 (0.84)	3.42 (0.84)	-1.093	0.276	0.15
Mate value	19.44 (4.29)	20.13 (4.26)	-1.163	0.246	0.16
Machiavellianism	25.11 (6.85)	23.15 (6.31)	2.164	0.032*	0.29
Narcissism	25.60 (5.32)	25.33 (4.85)	0.381	0.703	0.05
Psychopathy	21.18 (5.48)	17.50 (5.28)	4.945	0.0001**	0.68

SD = standard deviation.

***p < 0.05**

****p < 0.001**

Likewise, narcissism was positively associated with self-perceived attractiveness, mate value, and number of sexual partners for the whole sample and for the groups of men and women separately (see Table 2). Moreover, self-perceived attractiveness was positively correlated to mate value (for the whole sample: $r = 0.574$, $p < 0.0001$; men only: $r = 0.520$, $p < 0.0001$, women only: $r = 0.626$, $p < 0.0001$), whereas mate value was positively associated

with number of sexual partners for the whole sample and for the group of men only ($r = 0.172$, $p = 0.012$; $r = 0.247$, $p = 0.010$, respectively).

Table 2. Pearson correlations between the Dark Triad of Personality, self-perceived attractiveness, mate value, and number of sexual partners for the whole sample ($n = 210$), for men ($n = 107$), and for women ($n = 103$).

N = 210	Self-perceived attractiveness	Mate value	Number of sexual partners
The Dark Triad	r =	r =	r =
Machiavellianism	-0.005	0.041	0.173*
Narcissism	0.362***	0.491***	0.217**
Psychopathy	0.053	-0.025	0.352***
Men N = 107			
Machiavellianism	0.111	0.164	0.177
Narcissism	0.338***	0.470***	0.214*
Psychopathy	0.188	0.044	0.336***
Women N = 103			
Machiavellianism	-0.112	0.071	0.090
Narcissism	0.398***	0.525***	0.234*
Psychopathy	-0.032	-0.046	0.257**

* $p < 0.05$

** $p < 0.01$

*** $p < 0.0001$

The Dark Triad traits as predictors of attractiveness, mate value, and number of sexual partners

Our first model accounted for 15.4% of the overall variance ($R^2 = 0.154$, $F_{(4,205)} = 9.304$, $p < 0.0001$). Narcissism was the only significant individual predictor of self-perceived attractiveness ($B = 0.066$, $\beta = 0.397$, $t = 5.815$, $p < 0.0001$), such that both men and women with higher scores of narcissism were most likely to have higher self-reports of attractiveness. Non-significant effects were found for Machiavellianism ($B = -0.019$, $\beta = -0.147$, $t = -1.901$, $p = 0.069$), psychopathy ($B = 0.008$, $\beta = 0.055$, $t = 0.699$, $p = 0.485$), or sex ($B = 0.139$, $\beta = 0.082$, $t = 1.209$, $p = 0.228$).

The second model accounted for 27.0% of the variance ($R^2 = 0.270$, $F_{(4,205)} = 18.959$, $p < 0.0001$). As in the previous model, narcissism was the only significant predictor of mate value ($B = 0.455$, $\beta = 0.541$, $t = 8.541$, $p < 0.0001$). These results indicate that both men and women with higher scores of narcissism were most likely to report higher mate value. Non-significant effects were found for Machiavellianism ($B = -0.040$, $\beta = -0.063$, $t = -0.874$, $p = 0.383$), psychopathy ($B = -0.086$, $\beta = -0.114$, $t = -1.552$, $p = 0.122$), or sex ($B = 0.413$, $\beta = 0.048$, $t = 0.764$, $p = 0.446$).

The last model accounted for 16.1% of the overall variance ($R^2 = 0.161$, $F_{(4,205)} = 9.855$, $p < 0.0001$). Narcissism, psychopathy, and sex were significant predictors of number of sexual partners (narcissism: $B = 0.168$, $\beta = 0.154$, $t = 2.271$, $p = 0.024$; psychopathy: $B = 0.286$, $\beta = 0.292$, $t = 3.702$, $p < 0.0001$; sex: $B = -1.582$, $\beta = 0.143$, $t = -2.108$, $p = 0.036$). This result suggests that men with higher scores of narcissism and psychopathy tend to report higher number of sexual partners. Non-significant effects were found for Machiavellianism ($B = -0.041$, $\beta = -0.049$, $t = -0.641$, $p = 0.522$). There was no evidence of multicollinearity in any of the three models (all VIF < 1.5).

Discussion

During the last decade, the study about the evolutionary meaning of the relationships between the DT of personality and traits associated with human mate choice has increased (e.g., Carter et al, 2014; Lyons, Marcinkowska, Helle, & McGrath 2015; Marcinkowska, Helle, & Lyons, 2015; Lyons & Simeonov, 2016). However, very little is known about the predictive power of the DT and sex on these traits. Therefore, the aim of this study was to investigate the relationships between each component of the DT of personality, self-perceptions of attractiveness, mate value, and number of sexual partners in a sample of young men and women. The results of this study are in line with previous literature and with our predictions (with the exception of sex as a strong predictor).

First, as expected, we found that number of sexual partners was positively related to every component of the DT (i.e., Machiavellianism, narcissism, and psychopathy) for the whole sample, whereas only narcissism and psychopathy were positively correlated to every DT trait when men and women were analyzed separately. These results support previous literature about the exploitative nature of the DT; for example, Visser et al. (2010) observed that men with higher scores of psychopathy reported higher number of sexual partners; similar results have been also found for men with higher scores of Machiavellianism (McHoskey, 2001). Even though it has not been previously reported, there is evidence that suggests that narcissists also could have higher number of sexual partners (e.g., McNulty & Widman, 2014). To our knowledge, the present study is the first one in reporting positive associations between the number of sexual partners and each component of the DT in a sample of men and women.

Secondly, we found that narcissism, but not Machiavellianism or psychopathy, was positively related to self-perceived attractiveness, mate value, and number of sexual partners

in both sexes. This result supports previous studies where it has been stated that narcissistic people are characterized by inflated self-concepts associated with grandiosity, intelligence, social power, and physical attractiveness (Campbell, Rudich, & Sedikides, 2002; Brown & Zeigler-Hill, 2004) which probably increases the mating success of narcissists. Even though these relationships have been mainly reported for men, our study suggests that this could be also true for women. In this context, the socioecological environment of our population might explain this result. For example, the literature has proposed that narcissism is positively associated with preferences for exploitative short-term relationships and that this effect is stronger for men than for women (Jonason, Luevano, & Adams, 2012) due to the lower fitness costs paid by men (Buss & Schmitt, 1993). However, Finnish society is characterized by having a high educational level, high life quality, and very high equality between men and women (Salmi, 2006; Miettinen, Basten, & Rotkirch, 2011; Borchorst, Freidenvall, Kantola, Reisel, & Teigen, 2012). Thus, it could be possible that the sex-differences previously reported in other studies regarding the number of sexual partners, could be less strong in societies where women do not have to pay very high costs related to short-term relationships. In support of this hypothesis, there is evidence showing variability in personality traits and mate preferences according to several indicators of the condition of a society (e.g., DeBruine, Jones, Crawford, Welling, & Little, 2010; Borrás-Guevara, Batres, & Perrett, 2017; Marcinkowska, Rantala, Lee, Kozlov, Aayik, Cai, et al., 2019). For example, in the study of Marcinkowska et al. (2019), the authors found that women's preferences for masculine looking men (a trait associated with some components of the DT, Lyons et al., 2015), are stronger in countries with higher sociosexuality –Finland included– and where national health indices and development indices are higher. Thus, since masculinity is associated with promiscuousness and a preference for short-term relationships, this could explain the similar

pattern regarding the positive relationships between narcissism, psychopathy, and number of sexual partners in our sample of Finnish men and women.

Regarding the predictive power of the DT traits, we found that narcissism predicted self-perceived attractiveness and mate value in both sexes; whereas narcissism, psychopathy and sex had significant effects on the prediction of number sexual partners. In this sense, it has been suggested that narcissism (more than Machiavellianism or psychopathy) can be successfully explained in terms of evolutionary adaptations. For example, Holtzman and Strube (2010) suggested that narcissism could have emerged to solve problems related to sexual selection processes, allowing men to adopt short-term mating strategies. However, our results suggest that narcissism might work in a similar way for women as well, but it may depend on several socioenvironmental factors. Further studies are needed in order to give ecological validity to this hypothesis.

But why narcissism more than Machiavellianism or psychopathy? according to Holtzman and Donnellan (2015), narcissism can be distinguished from Machiavellianism because Machiavellians are less extroverted and prefer to act “behind the scenes” whereas narcissists prefer to be histrionic and get social attention. Likewise, psychopathy differs from narcissism because psychopaths tend to be violent and antisocial whereas narcissists tend to be assertive and to use non-violent dominance. Thus, it is possible that individuals do not like manipulative, cynical, manipulative, aggressive, remorseless, and duplicitous people such as Machiavellians and psychopaths (Rauthmann & Kolar, 2013). However, it is important to notice that whereas narcissism is positively correlated to the number of sexual partners both in men and women, narcissism, psychopathy, and sex play a significant role in the prediction of higher number of sexual partners. In this case, based on the differences in the average number of sexual partners and psychopathy scores between men and women, the effect would be stronger for men than for women. As it has been previously suggested, it is possible that

this sex difference might be still associated with the social costs imposed to women (e.g., bad reputation, lower attractiveness as a long-term mate) (Buss & Schmitt, 1993). Nevertheless, in the vast majority of our results, sex did not play a significant role.

Overall, the literature regarding narcissism have agreed on the possible benefits associated with this personality trait. For example, narcissists tend to increase their social status by displaying wealth and material goods (Piff, 2014), and pursuing leadership positions (Grijalva, Harms, Newman, Gaddis, & Fraley, 2015). Moreover, it has been observed that narcissists from both sexes have lower facial fluctuating asymmetry -an honest indicator of developmental stability and genetic quality- probably making them more desirable sexual partners by increasing their mate value (Borráz-León et al., 2019). Therefore, it is feasible to suggest that from the three components of the DT of personality, narcissism, more than Machiavellianism or psychopathy, is strongly associated with self-perceived attractiveness, mate value, and the acquisition of sexual partners both in men and women, which probably is regulating social and sexual selection processes. Further studies will have to take into account socioenvironmental factors related to the condition of the society where the study is being done, in order to investigate how the condition of a society could affect perceptions of mate value, mating success, and personality dynamics both in men and women.

Limitation of the study

A limitation emerged from this study since the high homogeneity of our sample limits generalizability. Therefore, the results of this research might not be representative of other populations. This limitation will be taken into account for future research.

Declaration of interest statement

The authors declare no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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