



# Women higher in psychopathy and more interested in marriage are subjected to more verbal insults by their long-term partner

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## ABSTRACT

We investigated whether women ( $n = 223$ ) higher in the Dark Triad traits (narcissism, psychopathy, Machiavellianism) are subjected to greater cost-inflicting mate retention behaviors by their long-term romantic partners, and we considered women's desire for marriage as a moderator. We found that women higher in narcissism reported lower levels of verbal insults associated with "derogating value as a person" inflicted by their partners. Women higher in psychopathy reported higher levels of verbal insults associated with derogating physical attractiveness, derogating value as a partner, accusations of sexual infidelity, and general cost-inflicting mate retention behaviors inflicted by their partners. Women higher in psychopathy and who also reported a higher desire for marriage were subjected to more cost-inflicting mate retention behaviors than women higher in psychopathy that reported a lower desire for marriage. In this context, mate retention behaviors may reduce the likelihood of infidelity by decreasing the self-worth of women higher on the Dark Triad traits so that they conclude they are unable to compete successfully for other partners.

## 1. Introduction

In sexually reproducing, parentally-investing species, reproductive effort is divided into mating effort and parenting effort (Buss, Shackelford, & McKibbin, 2008). Mating effort encompasses strategies to attract and retain a mate (Buss & Shackelford, 1997). Because humans form romantic relationships that may last decades or for their entire lives, individuals display mate retention behaviors to enhance their reproductive success by avoiding being a victim of mate poaching (Jonason, Li, & Buss, 2010), infidelity (Jones & Weiser, 2014), or, in the case of men, investing resources in offspring to whom they are not genetically related (Ene, Burtăverde, Jonason, & Avram, 2020). The last-mentioned reproductive loss may be the most severe for men, considering the ratio between invested resources and reproductive outputs. This idea is supported by research documenting that men invest more in offspring that resemble them in terms of facial features, perhaps as evidence of paternity (Ene et al., 2020).

To prevent reproductive losses, men can deploy *benefit-provisioning* mate retention behaviors, such as giving their partner a gift, which are lower-risk behaviors (i.e. less likely to drive away a partner or inflict injury on her, for example; Buss, 1988). Men also can deploy cost-

inflicting mate retention behaviors, such as insulting their partner or monopolizing her time, which are higher-risk behaviors (i.e. more likely to inadvertently drive away a partner or inflict injury on her, for example; Miner, Shackelford, & Starratt, 2009).

The nature, magnitude, and frequency of mate retention depend on several psychological characteristics related to reproductive success (Buss, 2003). One such characteristic is mate value, which reflects an individual's desirability as a partner on the "mating market" (Shackelford & Buss, 1997). In the case of men, they engage in more mate retention behaviors if their partners are higher in mate value – younger and more physically attractive, for example, which are cues to fertility (Buss & Shackelford, 1997). Men lower in mate value report more frequent deployment of mate retention behaviors, especially cost-inflicting behaviors, as women partnered to such men may be more interested in men higher in mate value and, therefore, more likely to be unfaithful or to defect from the relationship (Miner et al., 2009). In addition, men higher in mate value deploy more benefit-provisioning than cost-inflicting mate retention behaviors (Miner, Starratt, & Shackelford, 2009).

Personality and other individual differences predict the use of mate retention behaviors. For example, men lower in self-esteem display more

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cost-inflicting mate retention behaviors (Holden, Roof, McCabe, & Zeigler-Hill, 2015). Men higher in emotional stability display fewer mate retention behaviors, and men higher in agreeableness display more benefit-provisioning mate retention behaviors (McKibbin, Miner, Shackelford, Ehrke, & Weekes-Shackelford, 2014). Individuals higher in agreeableness and conscientiousness display fewer cost-inflicting mate retention behaviors than individuals lower on these traits. In contrast, and corroborating McKibbin et al. (2014), individuals lower in emotional stability display more cost-inflicting mate retention behaviors than those higher in emotional stability (Kardum, Hudek-Knezevic, Mehić, & Shackelford, 2020). Individuals higher in conscientiousness and openness to experience display fewer cost-inflicting mate retention behaviors (Atari, Barbaro, Sela, Shackelford, & Chegeni, 2017). Individuals lower in honesty-humility display more mate retention behaviors than individuals higher in honesty-humility (Holden, Zeigler-Hill, Pham, & Shackelford, 2014). Individuals who perceive themselves as lower in mate value than their partner display more mate retention behaviors (Conroy-Beam, Goetz, & Buss, 2016). Finally, men display more cost-inflicting mate retention behaviors than women (Shackelford, Goetz, Buss, Euler, & Hoier, 2005).

Thus, personality and other individual differences play an important role in explaining how humans deploy mate retention behaviors. This is not surprising given that some personality traits may reflect evolved mechanisms important in mating contexts (Buss, 1991). The Dark Triad traits (narcissism, psychopathy, Machiavellianism) are among the most important personality traits in mating psychology and behavior (Jonason, Li, Webster, & Schmitt, 2009). The Dark Triad traits are linked to a short-term mating strategy. Individuals higher on the Dark Triad traits have more sexual partners, report higher sexual desire, and are more interested in casual sex (Jonason, Valentine, Li, & Harbeson, 2011). In addition, those higher on the Dark Triad traits produce more offspring than people lower on the Dark Triad traits, suggesting that the Dark Triad traits facilitate reproductive success in the modern environment (Carter, Lyons, & Brewer, 2018).

The Dark Triad traits reflect individual differences in Machiavellianism (e.g., emotional coldness, exploitation of others), narcissism (e.g., sense of entitlement, attention-seeking, grandiosity), and psychopathy (impulsivity, antisocial behavior, and low empathy; Furnham, Richards, & Paulhus, 2013). Researchers have investigated the frequency with which individuals higher on the Dark Triad traits display mate retention behaviors (Chegeni, Pirkalani, & Dehshiri, 2018; Jonason, Li, & Buss, 2010). This research documents that individuals higher on the Dark Triad traits report greater use of both benefit-provisioning and cost-inflicting mate retention behaviors (Chegeni et al., 2018; Jonason, Li, & Buss, 2010). However, this research investigated how people higher on the Dark Triad traits use mate retention behaviors, not how the partners of individuals higher on the Dark Triad traits use mate retention behaviors. Identifying how individuals mated to those higher on the Dark Triad use mate retention behaviors may offer novel insights to the field of romantic relationships, given that the Dark Triad traits are related to mating effort and mating success (Valentova, Junior, Štěrbová, Varella, & Fisher, 2020). In the current study, we limit our focus to women higher on the Dark Triad traits and their reports of how their partners use cost-inflicting mate retention behaviors. We maintain this focus in part because women more than men are subjected more to cost-inflicting mate retention behaviors (Buss et al., 2008), a sex difference that may be attributable to an evolutionary history of paternity uncertainty. In the current study, we focus on cost-inflicting mate retention behaviors that are verbally expressed as insults, given that some cost-inflicting mate retention behaviors are less clear in terms of perception by the partner subjected to the mate retention behaviors (Miner et al., 2009).

Higher scores on the Dark Triad traits predict higher (i.e., less restrictive) sociosexuality (Jonason et al., 2009), which leads to a higher interest in sexual-related attitudes or behaviors and proneness to infidelity. For example, women higher on the Dark Triad traits report

greater sexual desire than women lower on the Dark Triad traits (Baughman, Jonason, Veselka, & Vernon, 2014). In addition, women higher on the Dark Triad traits engage more frequently in infidelity and mate poaching (Jonason, Li, & Buss, 2010). Therefore, men mated to women higher on the Dark Triad traits may engage in more cost-inflicting mate retention behaviors because they are aware that their partners are prone to infidelity, which may lead to relationship defection or paternity uncertainty. In this context, cost-inflicting mate retention behaviors may reduce the possibility of infidelity by decreasing the self-worth of women higher on the Dark Triad traits so that they conclude that they are unable to compete successfully for other partners (McKibbin et al., 2007). For example, derogating her value as a person by telling a partner repeatedly that she is worthless and deserves everything bad that happens to her (Goetz, Shackelford, Schipper, & Stewart-Williams, 2006) may cause her to believe that no other man would want her as a partner, and she may decide as a consequence to remain faithful in the current relationship. Thus, we expect that women higher on the Dark Triad traits may be subjected to more cost-inflicting mate retention behaviors than women lower on the Dark Triad traits. We note that among the Dark Triad traits, Machiavellianism is the least associated with sexual promiscuity or high sociosexuality (Tsoukas & March, 2018). This may be because, compared to psychopathy, for example, Machiavellianism is less characterized by impulsivity and excitement seeking (Jonason, Koehnig, & Tost, 2010). As such, women high on Machiavellianism may be less prone to infidelity, and their partners may therefore be less likely to subject them to cost-inflicting mate retention tactics.

**H1.** Women higher on the Dark Triad traits will report that they are subjected to more cost-inflicting mate retention behaviors than women lower on the Dark Triad traits.

Relationships between psychological characteristics are rarely exclusively bivariate (Coolican, 2006). Therefore, we should consider additional explanatory mechanisms for these relationships, such as the relationship between women's Dark Triad traits and the mate retention behaviors to which they are subjected. For example, desire for marriage may moderate the relationship between women's Dark Triad traits and the mate retention behaviors to which they are subjected. By desiring marriage, a woman implicitly prioritizes long-term romantic relationships and this may make her a more desirable partner for men also interested in long-term mating. In addition, the desire to marry may reflect high parenting effort, a trait especially valued by men in the context of long-term mating (Shackelford, Schmitt, & Buss, 2005). High parenting effort, in turn, may reflect important parenting skills and traits, such as emotional warmth, positive emotions, empathy, and conscientiousness (Buss & Barnes, 1986).

At first glance, it may be confusing to assume that women higher on the Dark Triad traits would also manifest a stronger desire for marriage and possess higher parenting effort potential, considering that individuals with higher levels of the Dark Triad traits are more egocentric and cold-hearted (Jonason et al., 2017), and likely to be more sexually promiscuous and unfaithful. However, these findings are from quantitative and correlational studies, which means that the results should be interpreted as such: most of the individuals who are higher on the Dark Triad traits are promiscuous or unfaithful. It does not mean that, in the population, there are no individuals high on the Dark Triad traits who are also oriented to long-term mating. Some research supports this idea. For example, there are individuals higher on the Dark Triad traits who are also lower on sociosexuality, and they remain single as a fitness-increasing strategy (Burtáverde & Ene, 2021). Also, individuals with higher levels of the Dark Triad traits that are also lower in sociosexuality are more jealous (Burtáverde, Jonason, Ene, Avram, & Istrate, 2021). The counterintuitive link between high Dark Triad traits and a stronger desire for marriage may also be explained from a person-centered approach, which refers to personality profiles (Kam & Zhou, 2016). According to this approach, some individuals that are higher on the Dark

Triad traits are also higher in conscientiousness (García & Moraga, 2017). Such women may desire marriage because of their higher conscientiousness, despite the fact that they are higher on the Dark Triad traits. Moreover, even if women higher on the Dark Triad traits are typically cold-hearted and have an instrumental view of marriage as a means to acquire resources and status, some of them may decide not to leave their partners, perhaps because they are lower in mate value. Having lower mate value, such women, even if they are higher on the Dark Triad traits, may remain with their partners because of a lack of attractive alternatives (Conroy-Beam et al., 2016).

It is important to mention that desiring marriage does not necessarily indicate that women are higher in parenting skills or are more committed to long-term romantic relationships. It may simply indicate that they desire to remain in a relationship with their partners. Moreover, considering that individuals partner with people who are similar to them (Kardum, Hudek-Knezevic, Schmitt, & Covic, 2017), it may be that women higher on the Dark Triad traits may be subjected to more cost-inflicting mate retention tactics because they are in a relationship with men higher on the Dark Triad traits who are more likely to use cost-inflicting mate retention tactics (Jonason, Li, & Buss, 2010).

Consequently, men partnered to women higher on the Dark Triad traits may display more cost-inflicting mate retention behaviors if their partner is higher in the desire for marriage because they consider them especially valuable partners for long-term relationships. Such men might be expected to perform more cost-inflicting than benefit-provisioning mate retention behaviors because, as noted, women higher on the Dark Triad traits also are higher in sociosexuality and prone to infidelity, which may lead to relationship defection. In contrast, men partnered to women higher on the Dark Triad traits who have lower desire for marriage are not expected to display more cost-inflicting mate retention behaviors because they may consider them less valuable partners for long-term relationships and, therefore, effort invested in mate retention would not be justified in terms of reproductive benefits. These ideas are supported by evidence that men are more likely to use cost-inflicting mate retention behaviors if they anticipate they are likely to remain with their current mate (Buss et al., 2008). Thus, we expect that desire for marriage will strengthen the relationship between women's Dark Triad traits and cost-inflicting mate retention behaviors performed by their partners.

**H2.** The desire for marriage will moderate the relationship between women's Dark Triad traits and cost-inflicting mate retention behaviors performed by their partners.

## 2. Method

### 2.1. Participants and procedure

We secured a sample of 223 women ( $M_{age} = 20.27$ ,  $SD = 4.28$ ), undergraduate psychology students that volunteered to participate. Of all the participants, 62.4% were in a relationship when they completed the measures. During a lecture in a course on personality psychology, the first author advertised the study, and those that volunteered received an extra credit point for the course. The measures were administered online using Google Forms. The link that contained the measures was distributed to the Google Classroom group. The average completion time was 15 min.

### 2.2. Measures

We assessed the Dark Triad traits with the Short Dark Triad Scale (Jones & Paulhus, 2014). This measure includes 27 items, nine for each of the Dark Triad traits: Machiavellianism (e.g., *I like to use clever manipulation to get my way*), narcissism (e.g., *I like to get acquainted with important people*), and psychopathy (e.g., *People who mess with me always regret it*), rated on a five-point Likert scale (1 = *strongly disagree*; 5 =

*strongly agree*). Responses to constituent items were averaged to create indexes for Machiavellianism (Cronbach's  $\alpha = 0.76$ ), narcissism ( $\alpha = 0.74$ ), and psychopathy ( $\alpha = 0.68$ ).

Cost-inflicting mate retention behavior was measured with the Partner-Directed Insults Scale (PDIS; Goetz et al., 2006). This measure has been established as a valid assessment of cost-inflicting mate retention behavior (Miner et al., 2009). Participants were presented the following information: "Men sometimes try to hurt their female partner's feelings by saying insulting things to them. The following list includes insulting things that a man might say to his partner." Next, participants rated 50 insults on a Likert scale (0 = *My partner has never said this insulting thing to me* to 5 = *My partner has said this insulting thing to me 25 or more times*). The items assess four insult dimensions: Derogating Physical Attractiveness (e.g., *My partner told me that most women are more attractive than I am*), Derogating Value as a Partner/Mental Competency (e.g., *My partner told me that I make his life miserable*), Derogating Value as a Person (e.g., *My partner called me a nobody*), and Accusations of Sexual Infidelity (e.g., *My partner called me a whore or a slut*). We averaged responses to constituent items for each dimension to obtain the indexes for the subscales scores. Next, we averaged subscale scores to obtain a total score for partner-directed insults. The internal consistency of the total score was 0.95.

We assessed desire for marriage with a single item with dichotomous response options (Yes/No): "Do you intend to marry?" The validity of this measure as an assessment of desire for marriage has been corroborated by previous research (Haslam & Montrose, 2015).

## 3. Results

Table 1 displays inter-correlations and descriptive statistics for the study variables.

Women's Machiavellianism was not associated with cost-inflicting mate retention behaviors. Women's narcissism was negatively related to derogating value as a person. Women's psychopathy was positively related to derogating physical attractiveness, derogating value as a partner, accusations of sexual infidelity, and cost-inflicting mate retention behaviors (i.e., verbal insults), partially supporting hypothesis 1, which stated that women higher on the Dark Triad traits will report that they are subjected to more cost-inflicting mate retention behaviors.

We conducted on a series of linear regressions (see Table 2) to test the predictive power of the Dark Triad traits and desire for marriage on cost-inflicting mate retention behaviors. Significance was tested using the bootstrapping method with bias-corrected confidence estimates (Preacher & Hayes, 2004). Collectively, the Dark Triad traits and desire for marriage predicted 6% of the variance for derogating physical attractiveness ( $R^2 = 0.07$ ;  $F[4, 218] = 3.77$ ,  $p = .001$ ). The residual for psychopathy ( $b = 0.12$ ,  $p = .001$ ) was associated with variance in derogating physical attractiveness. Further, the Dark Triad traits and desire for marriage predicted 7% of the variance for derogating value as a partner ( $R^2 = 0.07$ ;  $F[4, 218] = 4.28$ ,  $p = .001$ ). The residual of psychopathy ( $b = 0.25$ ,  $p = .001$ ) was associated with variance in derogating value as a partner. The Dark Triad traits and desire for marriage predicted 8% of the variance for derogating value as a person ( $R^2 = 0.08$ ;  $F[4, 218] = 4.84$ ,  $p = .001$ ) but none of the individual predictors was significant. The Dark Triad traits and desire for marriage predicted 8% of the variance for accusations of sexual infidelity ( $R^2 = 0.08$ ;  $F[4, 218] = 4.97$ ,  $p = .001$ ). The residual for psychopathy were associated with variance in accusations of sexual infidelity ( $b = 0.25$ ,  $p = .001$ ). Finally, The Dark Triad traits and desire for marriage predicted 9% of the variance for total cost-inflicting mate retention by women's partners ( $R^2 = 0.08$ ;  $F[4, 218] = 5.17$ ,  $p = .001$ ). The residual of psychopathy ( $b = 0.17$ ,  $p = .001$ ) was associated with variance in cost-inflicting mate retention by women's partners.

To investigate whether desire for marriage had a moderating effect on the relationships between women's Dark Triad traits and cost-inflicting mate retention behaviors by women's partners, we used the

**Table 1**  
Correlations (and descriptive statistics) between all the variables of the study.

Variable	1	2	3	4	5	6	7	8	9
1. Machiavellianism	–								
2. Narcissism	0.34**	–							
3. Psychopathy	0.47**	0.30**	–						
4. Derogating physical attractiveness	0.04	–0.06	0.18**	–					
5. Derogating value as a partner	0.08	–0.06	0.23**	0.73**	–				
6. Derogating value as a person	0.10	–0.15*	0.13	0.64**	0.71**	–			
7. Accusations of sexual infidelity	0.08	0.02	0.28**	0.58**	0.72**	0.61**	–		
8. Total verbal insults	0.09	–0.07	0.24**	0.83**	0.93**	0.84**	0.85**	–	
9. Desire marriage	0.04	0.09	–0.01	–0.13*	–0.05	–0.14*	–0.04	–0.10	–
M(SD)	2.84 (0.72)	2.96 (0.68)	1.85 (0.60)	1.20 (0.32)	1.40 (0.56)	1.10 (0.37)	1.19 (0.42)	1.22 (0.37)	No = 21.1%

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

**Table 2**  
Linear regression assessing the predictive power of the Dark Triad traits and desire for marriage on cost inflicting mate retention manifested by women's partners.

Independent variable	Derogating physical attractiveness		Derogating value as a partner		Derogating value as a person		Accusations of sexual infidelity		Total verbal insults	
	$\beta$	$R^2$	$\beta$	$R^2$	$\beta$	$R^2$	$\beta$	$R^2$	$\beta$	$R^2$
		0.06***		0.07**		0.08**		0.08**		0.09**
Machiavellianism	–0.01		0.01		0.05		–0.03		0.01	
Narcissism	–0.06		–0.12		–0.12		–0.03		–0.08	
Psychopathy	0.12**		0.25**		0.08		0.22**		0.17**	
Desire marriage	–0.13		0.01		–0.15		–0.05		–0.09	

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

medmod package for R and Jamovi to perform moderation analysis (see Tables 3 and 4; Fig. 1). Significance was tested using the bootstrapping method with bias-corrected confidence estimates (Preacher & Hayes, 2004). In this research, the 95% confidence interval of the indirect effects was obtained with 5000 bootstrap resamples.

Desire for marriage moderated the relationship between women's psychopathy and derogating value as a partner. Women higher in psychopathy were subjected to more cost-inflicting mate retention behaviors related to derogating value as a partner if they had a higher desire

**Table 3**  
Moderating effect of desire for marriage on the relationship between the Dark Triad traits and cost inflicting mate retention by women's partners.

Dependent variable	Predictor	B (SE)	LBCI	UBCI	z
Derogating value as a partner	Psychopathy	0.20 (0.06)	0.101	0.318	3.73**
	Desire for marriage	–0.09 (0.11)	–0.431	0.140	–0.63
	Psychopathy * desire for marriage	0.44 (0.20)	0.109	0.819	2.40*
Accusations of sexual infidelity	Psychopathy	0.19 (0.04)	0.097	0.286	3.98**
	Desire for marriage	–0.06 (0.08)	–0.439	0.152	–0.43
	Psychopathy * desire for marriage	0.32 (0.13)	0.113	0.614	2.58*
Total verbal insults	Psychopathy	0.14 (0.03)	0.077	0.218	3.96**
	Desire for marriage	–0.12 (0.07)	–0.428	0.090	–0.85
	Psychopathy * desire for marriage	0.30 (0.13)	0.089	0.597	2.35*

LBCI = Lower bound confidence interval; UBCI = upper bound confidence interval.

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

**Table 4**  
Simple slopes analysis for the moderating role of desire for marriage on the relationship between the Dark Triad traits and cost inflicting mate retention by women's partners.

	B (SE)	LBCI	UBCI	z
Psychopathy – derogating value as a partner				
Moderator: desire for marriage				
Average	0.20 (0.06)	0.979	0.326	3.69**
Low (-1SD)	0.06 (0.09)	–0.086	0.216	0.84*
High (+1SD)	0.34 (0.08)	0.199	0.511	4.25**
Psychopathy – accusations of sexual infidelity				
Moderator: desire for marriage				
Average	0.19 (0.04)	0.100	0.288	3.97**
Low (-1SD)	0.09 (0.06)	–0.046	0.197	1.50
High (+1SD)	0.29 (0.06)	0.174	0.421	4.58**
Psychopathy – total verbal insults				
Moderator: desire for marriage				
Average	0.14 (0.03)	0.077	0.220	3.91**
Low (-1SD)	0.05 (0.05)	–0.079	0.149	0.89
High (+1SD)	0.23 (0.05)	0.146	0.338	4.73**

LBCI = Lower bound confidence interval; UBCI = upper bound confidence interval.

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

for marriage (i.e. the impact of women's psychopathy on being subjected to derogating value as a person increased at higher levels of women's desire for marriage; Table 4). Further, desire for marriage moderated the relationship between women's psychopathy and accusations of sexual infidelity. Women higher in psychopathy were subjected to more cost-inflicting mate retention behaviors related to accusations of sexual infidelity if they had a higher desire for marriage (i.e. the impact of women's psychopathy on being subjected to accusations of sexual infidelity increased at higher levels of women's desire for marriage; Table 4). Finally, the desire for marriage moderated the relationship between women's psychopathy and cost-inflicting mate retention behaviors. Women with higher levels of psychopathy were subjected to more cost-inflicting mate retention behaviors if they had a higher desire

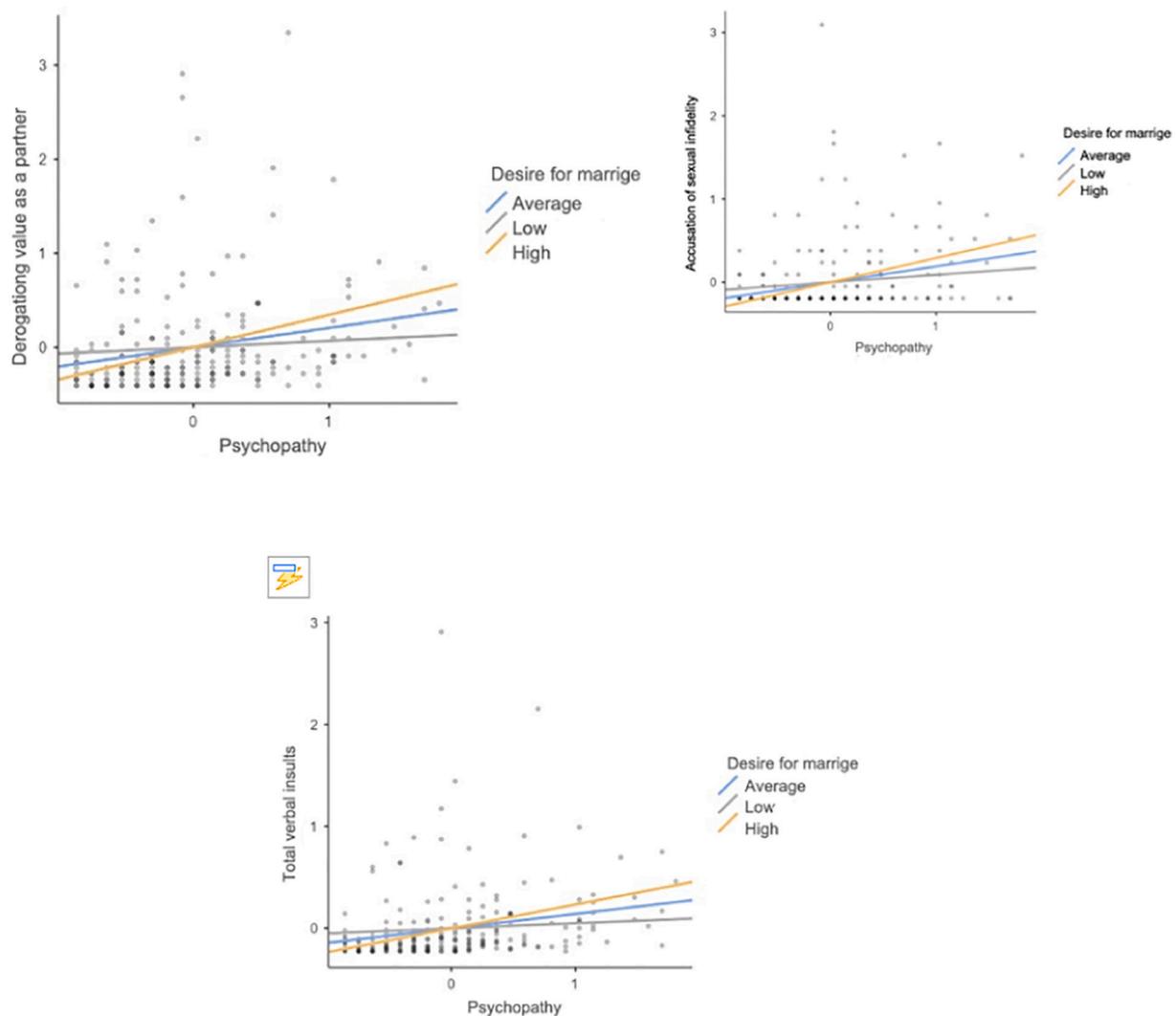


Fig. 1. Simple slopes plots for the moderating role of desire for marriage on the relationships between women's Dark Triad traits and cost-inflicting mate retention.

for marriage (i.e. the impact of women's psychopathy on being subjected to cost inflicting mate retention increased at higher levels of women's desire for marriage; Table 4). These findings partially supported hypothesis 2, which stated that the desire for marriage will moderate the relationship between women's Dark Triad traits and cost-inflicting mate retention behaviors performed by their partners.

#### 4. Discussion

We investigated the links between women's Dark Triad traits and cost-inflicting mate retention behaviors by their partners. We also tested the moderated effect of desire for marriage on the relationship between women's Dark Triad traits and the cost-inflicting mate retention behaviors to which they were subjected. We found that women higher in narcissism reported lower levels of derogating value as a person from their partners. Women higher in psychopathy reported higher levels of derogating physical attractiveness, derogating value as a partner, accusations of sexual infidelity, and cost-inflicting mate retention behaviors (i.e., verbal insults) from their partners. The desire for marriage moderated the relationship between women's narcissism and derogating value as a person, as well as the relationship between women's psychopathy and derogating value as a partner, accusations of sexual infidelity, and cost-inflicting mate retention behaviors.

Compared to psychopathy, women higher in narcissism reported less frequent cost-inflicting mate retention tactics by their partners, contrary

to our predictions. A possible explanation of the fact that women higher in narcissism reported lower levels of derogating value as a person from their partners might be that because individuals higher in narcissism are also higher in mate value (Zeigler-Hill & Trombly, 2018), their partners may consider them valuable partners that would be difficult to replace and, therefore, may deploy more benefit-provisioning than cost-inflicting mate retention behaviors. They may thereby avoid the negative consequences of cost-inflicting mate retention behaviors, such as negative health consequences (Miner et al., 2009).

The fact that women higher in psychopathy reported higher levels of derogating physical attractiveness, derogating value as a partner, accusations of sexual infidelity, and cost-inflicting mate retention behaviors from their partners may be explained by the higher mating effort, sociosexuality, proneness to infidelity, and mate poaching of women higher in psychopathy (Jonason, Koenig, & Tost, 2010; Jones & Weiser, 2014; Valentova et al., 2020). Men in a relationship with women higher in psychopathy may use more cost-inflicting mate retention behaviors because they know that their partners may engage in casual sex with other men or may actively court alternative mates, which may lead to relationship defection or paternity uncertainty. Cost-inflicting mate retention behaviors, such as derogating physical attractiveness and derogating value as a partner, may reduce the possibility of infidelity by decreasing the self-worth of women higher in psychopathy, after which they perceive that no other men will want them as a partner (McKibbin et al., 2007). Therefore, men mated to women higher on the Dark Triad

traits may use more cost-inflicting mate retention behaviors because they are aware that their partners are prone to infidelity, which may lead to relationship defection or paternity uncertainty. In this context, cost-inflicting mate retention behaviors may reduce the possibility of infidelity by decreasing the self-worth of women high on the Dark Triad traits so that they conclude that they are unable to compete successfully for other partners (McKibbin et al., 2007).

Women higher in psychopathy and who also reported a stronger desire for marriage were subjected to more cost-inflicting mate retention behaviors than women higher in psychopathy who reported a lower desire for marriage. Women with a higher desire for marriage value long-term romantic relationships, which makes them desirable partners for men interested in a long-term romantic relationship because this may reflect high parenting effort, which implies skills important in raising offspring, such as emotional warmth, positive emotions, empathy, and conscientiousness (Buss & Barnes, 1986). Consequently, men in a long-term relationship with a woman higher in psychopathy performed more cost-inflicting mate retention behaviors if their partners desired marriage to prevent relationship defection or paternity uncertainty, considering that women higher in psychopathy are prone to infidelity and casual sex.

Our research has several limitations. First, we relied on a young population of women. Young people have limited mating experience, and, as such, the current results may not be generalizable to populations of different age ranges. Second, we measured the desire for marriage without a frame of reference, which may affect the validity of the assessment by adding construct-irrelevant variance (Lievens, De Corte, & Schollaert, 2008). Third, we relied on a cross-sectional research design, which does not permit strong statements of causal inference. Fourth, we measured only cost-inflicting mate retention behaviors expressed as verbal insults, which may obscure effects that might be observable when a broader range of mate retention behaviors is assessed. However, despite these limitations, and as far as we are aware, this is the first research to investigate associations between women's Dark Triad traits and the cost-inflicting mate retention behaviors they are subjected to, considering desire for marriage as a moderator. We showed that women higher in narcissism or psychopathy are subjected to more cost-inflicting mate retention behaviors if they have a higher desire for marriage.

#### CRedit authorship contribution statement

**Vlad Burtáverde:** Conceptualization, Methodology, Data analysis, Dana interpretation, Reviewing and Editing.

**Todd K. Shackelford:** Conceptualization, Data interpretation, Reviewing and Editing.

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