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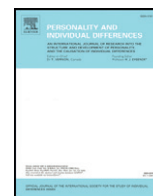
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# The Dark Triad and three types of jealousy: Its' relations among heterosexuals and homosexuals involved in a romantic relationship



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## ABSTRACT

The current study examined the relations between the three Dark Triad (DT) traits and three types of jealousy, among both heterosexual and homosexual men and women involved in a romantic relationship ( $n = 439$ ). It was hypothesized that the three DT traits would be related positively to those types of jealousy that have the potential to become delusional, that is anxious and preventive jealousy, but not to the relatively 'healthy' type of jealousy, that is reactive jealousy. In addition, differences were examined between men and women, and between homosexuals and heterosexuals with regard to the DT traits, the three types of jealousy, and the relationships between these variables. Results largely confirmed the hypothesis. In addition, moderation analyses showed that the relationships between the three DT traits and the three types of jealousy were not moderated by participant sex or sexual orientation. The current study's findings may deepen our understanding of the role of the DT in the mating psychology of both heterosexuals and homosexuals.

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## 1. Introduction

Previous studies have found consistent relations between the Dark Triad (DT; narcissism, psychopathy, and Machiavellianism) and short-term mating preferences (e.g., Jonason, Li, & Buss, 2010; Jonason, Luevano, & Adams, 2012). According to Jonason, Lyons, and Blanchard (2015) the DT traits - characterized by features such as entitlement, superiority, dominance (i.e., narcissism), glib social charm, deceit, manipulativeness (i.e., Machiavellianism), and erratic, antisocial behavior, impulsivity, and interpersonal antagonism (i.e., psychopathy) - may facilitate the access to short-term mates. In addition to being related to mating preferences, the DT traits have also been found to be related to the way individuals respond to (potential) relationship threats, once they are involved in an intimate relationship (Brewer, Hunt, James, & Abell, 2015; Goncalves & Campbell, 2014; Jonason et al., 2010; Rasmussen & Boon, 2014). Brewer et al. (2015), for instance, found that as women reported higher levels of psychopathy, they were more likely to take revenge (by, for instance, shouting and spreading rumors) in response to a hypothetical scenario describing a partner's infidelity. Likewise, Goncalves and Campbell (2014) found that the DT traits

were related to the use of specific rival derogation tactics. Whereas, for instance, individuals scoring higher (versus lower) on psychopathy reported a greater likelihood to attempt to damage the reputation of mate competitors, individuals scoring higher (versus lower) on narcissism indicated being more likely to attempt to outshine mating rivals.

### 1.1. Jealousy and the Dark Triad

One of the most common responses to a (potential) relationship threat is jealousy. Jealousy can be defined as the response to a threat or the actual loss of a romantic relationship as a result of an actual, or imagined, rival for one's partner's attention (e.g., Dijkstra & Buunk, 1998). Jealousy may be strengthened by the loss of self-esteem that may accompany the (potential) loss of a partner (DeSteno, Valdesolo, & Bartlett, 2006). Although the relations between the DT and responses to (potential) relationship threats have been examined in terms of mate retention tactics (Goncalves & Campbell, 2014) and intentions of revenge in response to a partner's infidelity (Brewer et al., 2015), the relations between the DT and jealousy have not yet been systematically examined. Massar, Winters, Lenz and Jonason (2017) studied the relations between jealousy and psychopathy, finding that secondary psychopathy (characterized by impulsivity and risky, antisocial behavior; primary psychopathy is characterized by callousness and manipulativeness), predicted the experience of jealousy. Research on the relations between jealousy and the other two DT traits - Machiavellianism and narcissism - is still lacking. It is, however, highly likely that all three

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DT traits are related to the experience of jealousy. For instance, the threat of losing a partner due to a rival's attention may especially affect those high in narcissism, who, more than others, may perceive the relationship threat as a threat to their own ego. Likewise, individuals high in Machiavellianism may experience more jealousy because they themselves tend to be more deceitful, and may project these deceitful intentions onto their partner, believing that he or she is relatively likely to be unfaithful. However, the exact relations between the DT and jealousy may depend on the type of jealousy that individuals experience. The present study therefore examines the relations between the DT traits and three types of jealousy.

### 1.2. Three types of jealousy

Jealousy is best conceptualized as a multidimensional phenomenon (e.g., Sharpsteen, 1991). That is, besides being an emotional response, jealousy also involves thoughts and coping behaviors (e.g., Pfeiffer & Wong, 1989; Sharpsteen, 1991). Consistent with this definition, Buunk (1997) distinguished between three qualitatively different types of jealousy: reactive, anxious and preventive jealousy. Reactive jealousy is the degree of upset that individuals experience when their mate is actually being emotionally or sexually unfaithful, for instance, when one's partner is flirting or having sex with someone else. Individuals may also experience preventive jealousy. Preventive jealousy – sometimes also referred to as possessive jealousy (e.g., Barelds & Dijkstra, 2007) – refers to an individual's tendency to prevent contact of their partner with a third person. For example, preventively jealous individuals may find it unacceptable that their mate has opposite-sex friends. As an extreme consequence, preventive jealousy may even lead to violence and stalking (Daly, Wilson, & Weghorst, 1982). Finally, anxious jealousy refers to a process in which the individual ruminates about the possibility of a mate's infidelity, and experiences feelings of anxiety, suspicion, worry, distrust, and upset (Buunk, 1997).

Central to Buunk's (1997) typology is the assumption that the three different types of jealousy differ in the extent to which they are potentially problematic or 'unhealthy' (Barelds & Dijkstra, 2006, 2007; Buunk, 1997). Because reactive jealousy constitutes a direct response to an actual relationship threat (for instance, one's partner is having sex with someone else), reactive jealousy can be considered relatively 'healthy' or 'rational'. Responding with jealousy when one's partner has been unfaithful may even be considered a sign of love and/or commitment. This line of reasoning is confirmed by Barelds and Dijkstra (2007) who found a positive relation between reactive jealousy and relationship quality, but not between the other types of jealousy and relationship quality. In contrast, both preventive and anxious jealousy may become problematic and negatively affect the intimate relationship. The most important reason for this is that both preventive and anxious jealousy may be triggered in response to an *imagined* rather than a real rival, and therefore may become delusional in nature (Barelds & Dijkstra, 2006, 2007; Buunk, 1997). Because of the potential delusional nature of anxious and preventive jealousy, we hypothesized these two types of jealousy – but not reactive jealousy – to be related to the three DT traits. There may be, at least, two ways in which the DT may fuel the delusional aspects of anxious and preventive jealousy. First, in the experience of jealousy, feelings and preferences of the self may become projected on the partner (e.g., Ellis, 1996). Since individuals reporting high DT scores, in general, have a stronger interest in short-term mating and are more likely to have been unfaithful themselves (Brewer et al., 2015; Jones & Weiser, 2014), they may believe that their mates are relatively likely to seek extra-dyadic sex as well, even if this is not the case. Second, several studies have shown some indications of positive assortative mating (the tendency to seek a mate that resembles the self) with regard to the DT (e.g., Jonason, Valentine, Li, & Harbeson, 2011; Lyons & Blanchard, 2016; Smith et al., 2014). Individuals with high scores on the DT traits may therefore have relatively similar mates, who, as a consequence, are also relatively interested in extra-dyadic sex. As a result, individuals

with high scores on the DT traits may be more vigilant about their partner's fidelity in general, and become relatively upset in response to only small or even illusory signs of infidelity.

### 1.3. Sex and sexual orientation

How the DT and jealousy are related may not only depend on the type of jealousy that individuals experience, but also on their sex and sexual orientation. Both sex and sexual orientation have been found to be related to jealousy in general and, more specifically, to the three types of jealousy distinguished by Buunk (1997). For instance, compared to their heterosexual counterparts, both homosexual men and women have been found to respond with less reactive jealousy to a partner's unfaithfulness, such as kissing with someone else (Barelds & Dijkstra, 2006). In a similar vein, in general, heterosexual women tend to report higher levels of anxious and reactive jealousy than heterosexual men (e.g., Barelds & Dijkstra, 2007). Regarding the DT, studies have also shown the sexes to differ, with men generally reporting higher DT scores than women (e.g., Jonason, Lyons, Bethell, & Ross, 2013). Although studies that have compared heterosexuals and homosexuals with regard to the DT are lacking, it may well be that, also with regard to the DT, homosexuals and heterosexuals differ. For instance, in studying the relations between the DT and the hormone testosterone, Pfattheicher (2016) found a positive relationship between narcissism and testosterone, a hormone that, in some studies (but not in others), has also been found to be related to homosexuality in men (e.g., Neave, Menaged, & Weightman, 1999; see also Garttrel, Loriaux, & Chase, 1977). In other words, there may be some biological markers that are related to both sexual orientation and one or more of the three DT traits, and that may cause the DT and sexual orientation to be related. Because of the differences between men and women and homosexuals and heterosexuals in the DT and/or jealousy, the present study also explored whether the relations between the DT and the three types of jealousy differed as a function of sex and sexual orientation.

### 1.4. The present study

The present study examines the relations between the DT and three types of jealousy (reactive, anxious, and preventive) in a sample of heterosexual and homosexual individuals involved in a romantic relationship. The present study examined individuals involved in romantic relationship only (in contrast to single individuals) since for these individuals the break-up of a romantic relationship is a more realistic concern than for individuals without a partner, and therefore is likely to lead to more realistic results. In addition to examining the relations between the DT and the three types of jealousy, the effects of sex and sexual orientation on the DT and jealousy will be examined, as well as moderator effects of sex and sexual orientation with regard to the relations between the DT and jealousy.

## 2. Method

### 2.1. Participants and procedure

A total of 726 participants completed the present study's online survey. Of these participants, 436 were heterosexual, 204 homosexual, and 86 indicated being bisexual. The latter group was removed from the sample, leaving 640 participants. Of these 640 participants, 201 indicated that they were currently single. These participants were also removed, leaving a final sample for the analyses of 439 participants, of which 140 were married, 172 were cohabiting, and 127 were involved in a serious relationship, but were not married or cohabiting. Mean relationship length was 10.5 years ( $SD = 11.3$ , ranging from less than one year to 40 years). The final sample consists of 77 heterosexual males, 235 heterosexual females, 42 homosexual males, and 85

heterosexual females. Mean age was 36.4 years ( $SD = 13.1$ , range 18–72). Participants were recruited by both the third author and a research assistant, by means of snowball sampling and contacting gay community groups (both face to face and by means of Facebook). Participants filled out an online survey that was developed for the purpose of the present study.

## 2.2. Measures

### 2.2.1. Dark Triad

The three Dark Triad traits were assessed by means of the Dark Triad Dirty Dozen (DTDD; Jonason & Webster, 2010). This measure consists of twelve items, that were assessed on seven point Likert scales, ranging from 1 (disagree strongly) to 7 (agree strongly). The three aspects of DT were assessed by four items each. Example items are 'I tend to expect special favors from others' (narcissism), 'I tend to lack remorse' (psychopathy) and 'I have used deceit or lied to have my way' (Machiavellianism). Although the DTDD is a very short measure to assess the Dark Triad personality traits, it appears to have good psychometric properties (e.g., Jonason & Luévano, 2013), also in The Netherlands, where the present study was conducted (e.g., Barelds, 2016; Klimstra, Sijtsema, Henrichs, & Cima, 2014). Cronbach's alphas in the present study were respectively 0.77 (Machiavellianism), 0.62 (psychopathy) and 0.75 (narcissism).

### 2.2.2. Jealousy

Jealousy was measured by means of the Revised Anticipated Sexual Jealousy Scale (Buunk, 1997), a scale consisting of fifteen items; five items for each of the three types of jealousy—reactive, anxious and preventive. The items of the reactive jealousy scale asked participants how upset they would feel if their partner would engage in various extra-dyadic intimate and sexual behaviors, such as having sexual contact with someone else or flirting with someone else. These five items were assessed on a five-point scale, ranging from 1, 'not at all upset', to 5, 'extremely upset'. Preventive jealousy was assessed by items such as 'I don't want my partner to meet too many people of the opposite sex'. For each item, the five possible answers ranged from 1, 'not applicable', to 5, 'very much applicable'. Anxious jealousy was assessed by items such as 'I worry about the idea that my partner could have a sexual relationship with someone else'. Items were scored on five-point scales, ranging from 1, 'never', to 5, 'very often'. Previous studies have found support for the validity and reliability of this instrument (e.g., Barelds & Dijkstra, 2003, 2006). Cronbach's alphas for the three subscales in the present study were 0.80 (reactive jealousy), 0.84 (preventive jealousy) and 0.87 (anxious jealousy).

## 3. Results

To test the prediction that anxious and preventive jealousy, but not reactive jealousy, would be related to the three DT traits, correlations were computed between the DTDD scales and the three types of jealousy, for the whole sample. Although correlations were generally low, Table 1 shows that, at large, our hypothesis was confirmed. Whereas none of the three DT traits was significantly related to reactive jealousy,

anxious jealousy was weakly, but positively related to both narcissism ( $r = 0.11$ ,  $p < 0.05$ , marginally significant) and Machiavellianism ( $r = 0.13$ ,  $p < 0.01$ ), and preventive jealousy to all three DT-traits ( $r$ s ranging from 0.14 to 0.21,  $ps < 0.01$ ).

For exploratory purposes, mean DT scores and jealousy scores were computed for the four groups (male heterosexuals, female heterosexuals, male homosexuals and female homosexuals) separately (see Table 2). Multivariate analyses of variance using sex and sexual orientation as independent variables and jealousy and the three DT traits as dependent variables, showed multivariate main effects of sex,  $F(6, 427) = 9.23$ ,  $p < 0.001$ , and sexual orientation,  $F(6, 427) = 8.43$ ,  $p < 0.001$ , as well as a significant multivariate interaction effect between sex and sexual orientation,  $F(6, 427) = 4.77$ ,  $p < 0.001$ . The multivariate main effect of sex could be attributed to significant univariate effects for reactive jealousy, Machiavellianism, and psychopathy. Women reported higher levels of reactive jealousy than men [ $M = 17.07$ ,  $SD = 4.44$  vs.  $M = 14.87$ ,  $SD = 5.08$ ,  $F(1, 436) = 20.26$ ,  $p < 0.001$ ], whereas men reported higher levels of Machiavellianism [ $M = 12.66$ ,  $SD = 5.38$  vs.  $M = 10.17$ ,  $SD = 4.56$ ,  $F(1, 436) = 17.93$ ,  $p < 0.001$ ], and psychopathy [ $M = 13.82$ ,  $SD = 5.22$  vs.  $M = 10.59$ ;  $SD = 4.35$ ,  $F(1, 436) = 26.20$ ,  $p < 0.001$ ] than women. The multivariate main effect of sexual orientation could only be attributed to a significant univariate effect for reactive jealousy. Heterosexuals reported higher levels of reactive jealousy than homosexuals [ $M = 16.96$ ,  $SD = 4.52$  vs.  $M = 13.87$ ,  $SD = 4.58$ ,  $F(1, 436) = 35.97$ ,  $p < 0.001$ ]. The multivariate interaction between sexual orientation and sex could only be attributed to a significant univariate effect for psychopathy,  $F(1, 436) = 8.14$ ,  $p < 0.01$ , showing that heterosexual men score relatively high on psychopathy (see Table 2).

Next, moderation analyses were conducted to explore the potential moderating role of sex and sexual orientation in the relations between the three DT traits and the three types of jealousy. For each type of jealousy, a regression analysis was conducted using the three DT traits (standardized), sex and sexual orientation (dummy coded) and their interaction effects as predictors. Results showed that the relations between the three DT traits and the three types of jealousy were not moderated by sex and/or sexual orientation ( $|βs| ≤ 0.123$ ,  $|ts| ≤ 2.127$ ,  $p > 0.05$ ).

## 4. Discussion

The present study set out to examine the relations between the three DT traits and three types of jealousy among both heterosexuals and homosexuals involved in an intimate relationship. We expected to find positive relations between the three DT traits and two types of jealousy, that is preventive and anxious jealousy, but not between the three DT traits and reactive jealousy. Results largely confirmed the hypothesis. Machiavellianism and Narcissism were (weakly) related to anxious jealousy, and all three DT traits were related to preventive jealousy, that is, the type of jealousy that encourages behaviors aimed at preventing contact of one's partner with a third person. Possessiveness is a central feature of preventive jealousy, and one of the reasons that this type of jealousy has also been labeled possessive jealousy (e.g., Barelds & Dijkstra, 2007). In extreme forms preventive jealousy may lead to aggressive behaviors, unwanted pursuit and stalking (e.g., Tassy &

**Table 1**  
Descriptive statistics and correlations between the Dark Triad and the three types of jealousy.

	<i>M</i>	<i>SD</i>	Reactive	Anxious	Preventive	Machiavellianism	Psychopathy	Narcissism
Reactive jealousy	16.47	4.72	1					
Anxious jealousy	8.74	3.43	0.35**	1				
Preventive jealousy	7.34	3.36	0.53**	0.56**	1			
Machiavellianism	10.82	4.91	−0.02	0.13**	0.21**	1		
Psychopathy	11.48	4.83	−0.07	−0.02	0.14**	0.38**	1	
Narcissism	13.14	4.46	0.05	0.11*	0.17**	0.47**	0.25**	1

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .



**Table 2**

Means on the Three Dark Triad Traits and three types of jealousy as a function of sex and sexual orientation.

	Males				Females			
	Heterosexual		Homosexual		Heterosexual		Homosexual	
	M	SD	M	SD	M	SD	M	SD
Reactive jealousy	16.28 <sub>a</sub>	4.88	12.22 <sub>b</sub>	4.38	17.63 <sub>a</sub>	4.36	15.51 <sub>c</sub>	4.31
Anxious jealousy	8.07 <sub>a</sub>	3.60	9.05 <sub>a</sub>	3.66	9.04 <sub>a</sub>	3.36	8.38 <sub>a</sub>	3.29
Preventive jealousy	6.96 <sub>a</sub>	3.30	7.62 <sub>a</sub>	4.56	7.65 <sub>a</sub>	3.25	6.67 <sub>a</sub>	2.94
Machiavellianism	12.87 <sub>a</sub>	5.21	12.25 <sub>ac</sub>	5.67	10.11 <sub>b</sub>	4.54	10.22 <sub>bc</sub>	4.63
Psychopathy	14.61 <sub>a</sub>	5.46	12.52 <sub>ab</sub>	4.55	10.41 <sub>b</sub>	4.26	11.09 <sub>b</sub>	4.57
Narcissism	13.96 <sub>a</sub>	4.44	13.13 <sub>a</sub>	5.30	13.00 <sub>a</sub>	4.26	12.80 <sub>a</sub>	4.55

Note: means with different subscripts within rows differ significantly ( $p < 0.01$ ).

Winstead, 2014), behaviors that also have been found to be related to one or more of the DT traits (Jones & Neria, 2015; Storey, Hart, Meloy, & Reavis, 2009). It must be noted, however, that the possessive nature of preventive jealousy may not necessarily be expressed in a negative way. For instance, when a preventively jealous partner buys flowers or jewelry in order to keep his or her mate interested and thus preventing him or her from seeking contact with others, the partner may perceive these behaviors as positive in terms of attention and commitment (Barelids & Dijkstra, 2007). Because of this somewhat ambivalent nature of preventive jealousy in terms of the behavior in which it is expressed, previous studies have reported inconsistent relations between preventive jealousy and relationship quality (Barelids & Dijkstra, 2006, 2007). Future studies may be needed to shed further light on the specific preventive actions that are related to the three DT traits, and, in so doing, specify more precisely the relations between preventive jealousy and the DT traits.

Contrary to the expectation, psychopathy was not related to anxious jealousy. A possible explanation for this finding is that the four items in the DTDD that capture psychopathy appear to reflect primarily primary, not secondary psychopathy. Particularly the impulsive component of psychopathy is not reflected in the DTDD items. A previous study by Massar et al. (2017) showed that particularly secondary psychopathy was related to the experience of jealousy. The finding that neither of the Dark Triad traits was significantly related to reactive jealousy was consistent with our expectation. Whereas anxious and preventive jealousy may also arise in response to *imagined* infidelity, reactive jealousy is by definition triggered by a partner's *actual* infidelity. As a consequence, in the experience of reactive jealousy the projection of one's own promiscuous tendencies is far less relevant than in the situation that one only suspects one's partner to be unfaithful. It therefore can be expected that most people, including those with high Dark Triad scores, will report high levels of reactive jealousy.

The present study did not find the relations between anxious and preventive jealousy and the three DT traits to depend on sex or sexual orientation. Consistent with previous studies on both jealousy and DT, the current research did however find effects of sex and sexual orientation on both jealousy and the DT traits. For instance, consistent with Barelids and Dijkstra (2006), both homosexual men and women reported lower levels of reactive jealousy in response to an act of sexual infidelity of their partner than their heterosexual counterparts. This may be explained by the fact that sexual non-exclusivity is more commonly accepted in same sex relationships, and even often normalized in gay male partnerships (Heaphy, Donovan, & Weeks, 2004).

The finding that men generally scored higher on the Dark Triad traits is consistent with previous studies and may be explained from an evolutionary/adaptation perspective (cf. Jonason & Webster, 2010, p. 430): men should, from this perspective, benefit more from social exploitation of other people than women (e.g., Buss & Duntley, 2008), who in turn are more dependent on their social networks than men (Jonason, Webster, & Lindsey, 2008). A noteworthy finding was also that, with regard to the DT traits, heterosexual men reported higher

levels of psychopathy scores relative to other participants of the other sex and/or other sexual orientation. The psychopathy scores of gay men fell in between women's scores and heterosexual men's scores, but did not differ significantly from heterosexual men.

#### 4.1. Strengths and limitations

The present study is of interest to the literature for several reasons. First, the present study is the first to systematically study the three DT traits in relation to three types of jealousy, among both heterosexuals and homosexuals, thus increasing our knowledge with regard to the intimate relationships of both heterosexuals and homosexuals. Despite its relevance, the present study also suffers from some limitations. One limitation of the present study is, for instance, that participants were recruited by means of snowballing. Therefore, it is highly likely that the sample is not representative for the general population of heterosexuals and homosexuals. In addition, it must be noted that the relations between anxious and preventive jealousy and the three DT traits were rather weak. A possible explanation is that the present study's participants were, on average, already in their thirties and reported a mean relationship duration of 10 years, which indicates that many participants were involved in long term relationships. It is possible that the DT, as suggested by previous studies (e.g., Jonason et al., 2010; Jonason et al., 2012), are especially relevant in the context of short-term mating and/or mating at a younger age (which in turn is related to short-term mating). For this reason, it might be a good idea to try to replicate the present study in a sample of younger individuals, for instance individuals in their late teens and early twenties, who have less stable relationships. It is possible that in such a sample the relations between the DT traits and anxious and preventive jealousy will be more pronounced. It must be noted, however, that explorative analyses on the present study's data, using relationship length as a moderator, did not produce any significant results. Longitudinal studies in particular might therefore shed more light on the role of relationship length in the relation between the Dark Triad and jealousy.

Another limitation of the present study is that single source data was collected. Future studies might, for example, also include partner ratings of the Dark Triad traits and/or jealousy. Also, it would seem interesting to include, in future studies, participants who are more likely to obtain high scores on the Dark Triad traits, for example participants with a narcissistic or antisocial personality disorder, and compare their jealousy scores to other individuals. Finally, the present study is cross-sectional in nature, which means that no causal inferences can be made. Despite these limitations, the present study aims to contribute to the growing body of knowledge about the Dark Triad and its role in mating psychology, in both heterosexuals as homosexuals.

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