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## Green-eyed snakes: The associations between psychopathy, jealousy, and jealousy induction<sup>☆</sup>



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### ABSTRACT

The available literature on psychopathy suggests that individuals scoring high on primary or secondary psychopathy traits might respond differently to jealousy-arousing situations, but to date this has not been investigated directly. In the current study, we collected responses from 244 women and 103 men who completed measures of psychopathy, multidimensional jealousy, jealousy induction, and motives for inducing jealousy. Primary psychopathy predicted emotional jealousy, jealousy induction, and inducing jealousy to gain control over or to exact revenge on one's partner. Secondary psychopathy predicted the experience of suspicious and emotional jealousy, as well as inducing jealousy to test the relationship, gain control/power over one's partner, or gain self-esteem. In addition, primary and secondary psychopathy fully mediated sex differences in the power/control motive for jealousy induction, and partially mediated sex differences in emotional jealousy. These findings provide support for a two-factor model of psychopathy when investigating affective experiences in interpersonal relationships, and indicate a need for further research on the influence of "dark" personality traits on emotions and behavior in intimate relationships.

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Psychopathy is characterized by superficial charm, manipulation, callousness, impulsivity, egocentricity, antisocial behaviors, and a fundamental lack of empathy (e.g., Hare, 2003; Newman, MacCoun, Vaughn, & Sadeh, 2005; Williams, Paulhus, & Hare, 2007). It can be seen as existing on a continuum, ranging from "successful" (i.e., noncriminal or subclinical psychopaths) to "criminal" (Hare & Neumann, 2008; Hall & Benning, 2006), and may exist in two main forms: primary and secondary psychopathy (Karpman, 1941; Poythress & Skeem, 2007). Primary psychopathy is characterized by instrumental and manipulative tendencies in peer and romantic relationships, and a lack in emotions such as empathy, anxiety, or remorse (Hare, 2003; Mealey, 1995; Newman et al., 2005). Secondary psychopathy includes aspects such as risky and impulsive behaviors, the absence of long-term goals, and a low frustration tolerance. It is characterized by high levels of anxiety and is theorized to be more influenced by environmental factors than primary psychopathy (Hare, 2003; Mealey, 1995; Newman et al., 2005). With regard to personal and romantic relationships, psychopathic traits are associated with more relationship dissatisfaction and distress in both partners (Savard, Sabourin, & Lussier, 2006),

short-term mating preferences (Jonason, Li, Webster, & Schmitt, 2009), the endorsement of a game-playing love style (Jonason & Kavanagh, 2010), limited mate retention but enhanced mate poaching (Jonason, Li, & Buss, 2010), and deception (Seto, Khattar, Lalumiere, & Quinsey, 1997). However, not much is known about psychopaths' capacity and propensity towards experiencing jealousy.

Generally, romantic jealousy is defined as the negative emotional state generated in response to a threatened or actual loss of a valued relationship because of the presence of a real or imagined rival (Parrott & Smith, 1993). There are at least three forms of jealousy: emotional, behavioral, and cognitive jealousy (Pfeiffer & Wong, 1989). *Emotional jealousy* is best described as an emotional reaction to a perceived threat, and it is associated with more positive relationship qualities and outcomes than other types of jealousy (Elphinston, Feeney, & Noller, 2011). *Cognitive jealousy* revolves around thoughts and worries of the partner committing an infidelity, whereas *behavioral jealousy* instigates behaviors such as checking one's partners' belongings and communications for signs of possible infidelities. While emotional jealousy is reactive, cognitive jealousy and behavioral jealousy are pre-emptive, in that they are rooted in suspicions and anxiety that infidelity will or has already occurred (Rydell & Bringle, 2007). Together, behavioral and cognitive jealousy can be conceptualized as *suspicious jealousy*, and when

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<sup>1</sup> Throughout this paper the term "psychopath" is used as an abbreviation. This term does not convey a clinical diagnosis, psychopathology, or a type of person. Rather, it is used as the short form of "someone scoring high on a measure of subclinical psychopathy".

experienced to a large degree, can lead to controlling and obsessive behaviors towards one's partner.

The experience of jealousy has been described as a “narcissistic injury” to the psychopath's self-esteem (Spidel et al., 2007), but these statements apply to forensic populations rather than subclinical psychopathic individuals. Individuals with primary and secondary psychopathic traits might respond differentially to jealousy-arousing situations. For example, primary psychopaths are characterized by callous affect and a diminished ability to monitor their own emotions (Malterer, Glass, & Newman, 2008). In response to interpersonal conflict they tend to show inhibited anger (Reidy et al., 2013). We therefore predict that in response to a relationship threat, primary psychopaths are less likely to experience emotional and suspicious jealousy. In contrast, secondary psychopaths are characterized by an impulsive, anxious, and emotional behavioral style and a diminished capacity to regulate and repair emotions (Malterer et al., 2008). Moreover, they react with increased anger in response to conflicts (Reidy et al., 2013). We therefore expect that after a relationship threat, secondary psychopaths will report emotional and suspicious jealousy.

Jealousy is not only a result of a real or imagined transgression; it is sometimes used as a means to an end. Romantic jealousy induction is a strategic behavioral process designed to elicit a reactive jealous response from a partner to achieve a goal — usually mate retention (Jonason et al., 2010; Mattingly, Whitson, & Mattingly, 2012). For instance, women tend to induce jealousy more often than men and they tend to do so for reasons such as testing the relationship and a desire for power or control (White, 1980). Furthermore, jealousy induction is associated with aggression in relationships and a need for control (Brainerd, Hunter, Moore, & Thompson, 1996), and it is positively correlated with jealous thoughts and behaviors (i.e., suspicious jealousy) but not with jealous emotions (Mattingly et al., 2012).

Individuals with psychopathic traits are likely to use jealousy induction as a mate retention tactic (Jonason et al., 2010). Overall, inducing jealousy in one's partner tends to be related to relational power and control (e.g., Dainton & Gross, 2008; Mattingly et al., 2012). Jealousy induction might be employed for various reasons like testing the relationship, revenge, power/control, security seeking, and gaining self-esteem (Mattingly et al., 2012). Since jealousy induction can be motivated by seemingly malevolent reasons (i.e. to get revenge on or control the partner), it is of interest to distinguish the more benign reasons from hurtful ones when examining psychopathy traits of inducers. Because jealousy induction involves manipulating and controlling one's partner, which is typical of psychopaths, these individuals might be more likely to induce jealousy for these reasons rather than to strengthen their relationship. In addition, an individual's experience of jealousy may influence the various motivational drives to induce jealousy in their partner. Specifically, we expect that primary psychopathy will predict the more malevolent motives for jealousy induction (power/control and revenge), whereas secondary psychopathy will be associated with the ‘benign’ motives (testing the relationship, security, and gaining self-esteem). In addition, since men consistently score higher on psychopathy measures than women (e.g. Jonason et al., 2010; Jonason et al., 2009), we will explore moderation and mediation of participant sex in the relationships between the psychopathy factors and our dependent variables.

## 1. Method

### 1.1. Participants & procedure

Heterosexual participants in a relationship (specified as lasting at least 2 months) were recruited from various sources (e.g., the university student participant pool, MTurk, Facebook, etc.). In total, 244 women ( $M_{age} = 28.00, SD = 9.29$ ) and 103 men ( $M_{age} = 31.16, SD = 9.61$ ) participated. Of these participants, 72% were American, 20.2% were Dutch, 4.3% were German, 2% were Belgian, and 1.5% reported another nationality (e.g., Japanese, British, Chilean).

After logging on to the online survey, participants were informed about the global aim of the study — the interaction between personality traits and relationship processes. Then they provided informed consent and demographic information, and completed the measures listed below. Ethical approval for all measures and procedures was obtained from the local Ethics Committee of Psychology.

### 1.2. Materials<sup>2</sup>

More detailed instructions and materials, as well as the datafile, can be found at the Open Science Framework (<https://osf.io/gz4b5/>). Alpha coefficients reported in this section refer to the current data.

The Self-Report Psychopathy Scale-III (SRP-III; Williams et al., 2007) was used to measure psychopathy. On a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*) participants indicate agreement with 64 items. The scale consists of 4 facets which combine to represent the traditional two-factor model of psychopathy: Primary psychopathy consists of callous affect and interpersonal manipulation (Cronbach's  $\alpha = .89$ ), and secondary psychopathy consists of erratic lifestyle and antisocial behavior (Cronbach's  $\alpha = .87$ ).

The Short-Form of the Multidimensional Jealousy Scale (Elphinston et al., 2011) is a 17-item scale measuring one's general degree of jealousy experiences on three different subscales: Emotional, Cognitive, and Behavioral jealousy. For the questions of this scale, participants were asked to think of their current partner (“X”) in relation to each item. For emotional jealousy ( $\alpha = .85$ ), respondents used a 7-point Likert-type scale (1 = *very pleased*; 7 = *very upset*) to rank their degree of upset in response to a perceived relationship threat, e.g., “X is flirting with a member of the opposite sex all the time”. Similarly, on a 7-point scale (1 = *never*; 7 = *all the time*) participants indicated their self-assessed frequency of jealous thoughts and behaviors. Example statements are: “I suspect that X may be attracted to someone else”. Together, these latter jealousy types are conceptualized as Suspicious jealousy (Cronbach's  $\alpha = .84$ ).

The Romantic Jealousy Induction Scale was used to measure jealousy induction (Mattingly et al., 2012). This scale consists of 18 items and is designed to measure the endorsement of purposeful practices that are aimed at making one's partner jealous. It demonstrated excellent internal consistency (Cronbach's  $\alpha = .96$ ). Respondents used a 7-point Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*), to indicate their agreement with statements such as “I flirt with people in front of X in order to make X jealous.”

The Motives for Inducing Romantic Jealousy Scale (Mattingly et al., 2012) is a 22-item scale used to measure the different motivations that one has for inducing romantic jealousy in his/her mate. The scale demonstrated overall good internal consistency (Cronbach's  $\alpha = .94$ ) and consists of the following subscales: Testing the relationship (e.g., “I want to see if my partner still cares about me”; Cronbach's  $\alpha = .90$ ), Taking revenge (e.g., “I want to punish my partner for something bad s/he has done”; Cronbach's  $\alpha = .88$ ), Obtaining power/control (e.g., “I want to be able to control my partner/relationship”; Cronbach's  $\alpha = .82$ ), Seeking security (e.g., “I don't want my partner to leave me”; Cronbach's  $\alpha = .90$ ), and Gaining self-esteem (e.g., “I feel inadequate”; Cronbach's  $\alpha = .84$ ). Respondents used a 7-point Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*) to indicate their level of agreement with each motivation.

## 2. Results

First, *t*-tests were conducted to examine sex differences (see Table 1). Men scored significantly higher than women on both factors

<sup>2</sup> In addition to the measures reported here, participants completed measures for another study. These included The Short Dark Triad (Jones & Paulhus, 2014), Mate Guarding scale (Buunk & Solano, 2002), and the Desirability of Control Scale (Burger & Cooper, 1979). All measures of the survey were administered in random order.

**Table 1**  
Descriptive statistics and sex differences for primary and secondary psychopathy, jealousy experience, and jealousy induction.

	M (SD)			t-test	Hedges' g
	Overall	Women	Men		
Primary psychopathy	2.37 (0.53)	2.24 (0.49)	2.68 (0.50)	−7.82**	0.93
Secondary psychopathy	2.12 (0.62)	2.01 (0.48)	2.37 (0.50)	−6.58**	0.79
Emotional jealousy	2.37 (0.85)	2.22 (0.76)	2.74 (0.95)	−5.44**	0.65
Suspicious jealousy	1.94 (0.77)	1.95 (0.75)	1.93 (0.82)	−0.11	0.01
Jealousy induction	1.43 (0.59)	1.40 (0.54)	1.49 (0.68)	−1.31	0.16
Motives for inducing jealousy:					
Testing the relationship	3.86 (1.53)	3.91 (1.56)	3.75 (1.45)	0.83	0.09
Taking revenge	2.53 (1.43)	2.48 (1.43)	2.66 (1.43)	−0.82	0.09
Obtaining power/control	2.53 (1.27)	2.44 (1.27)	2.74 (1.26)	−1.98*	0.24
Seeking security	3.71 (1.90)	3.75 (1.94)	3.62 (1.81)	0.56	0.07
Gaining self-esteem	3.56 (1.62)	3.61 (1.67)	3.44 (1.52)	1.06	0.13

Note. Hedges' g is a measure of effect size that adjusts for unequal sample sizes.

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

of psychopathy, emotional jealousy, and the power/control motive for jealousy induction. Next, controlling for the shared variance between primary and secondary psychopathy ( $r(337) = .64, p < .001$ ), we conducted partial correlational analyses to explore the relationships between primary and secondary psychopathy and each of the outcome measures for men and women separately (see Table 2). Significant correlations between secondary psychopathy and suspicious jealousy were found for women ( $r_p(223) = .13, p < .05$ ) and for men ( $r_p(94) = .39, p < .01$ ); the difference between these correlations was significant (Fisher's  $z = 2.26, p < .05$ ). Similarly, the correlation between secondary psychopathy and jealousy induction was significantly stronger for men ( $r_p(94) = .36, p < .01$ ) than for women ( $r_p(223) = .11, p < .10$ ; Fisher's  $z = 2.14, p < .05$ ).

We performed eight multiple regression analyses, in which primary and secondary psychopathy were added as simultaneous predictors (controlling for age and sex; see Table 2). Primary psychopathy predicted emotional jealousy, jealousy induction, and the revenge and power/control motives, whereas secondary psychopathy was a predictor of all variables, with the exception of the revenge and the security motives. Since the  $t$ -tests revealed sex differences for emotional jealousy and the motive for control/power, we included interaction terms between sex and the two factors of psychopathy in the regression analyses to explore these further, but we found no indications of moderation.<sup>3</sup>

Next, to determine whether the sex differences found for these two variables might be mediated by the psychopathy factors, we conducted process bootstrapped mediation analyses (5000 bootstrap samples; all variables standardized) including primary and secondary psychopathy simultaneously as mediators.<sup>4</sup> These analyses revealed that primary and secondary psychopathy partially mediated sex differences in emotional jealousy (total indirect effect  $\beta = .21, 95\% \text{ CI } [.108, .347]$ ;  $R^2 = .14, F(3, 334) = 17.39, p < .001$ ), such that the total effect ( $\beta = .62, t(334) = 5.45, p < .001$ ) was reduced when the indirect effect was added (direct effect  $\beta = .41, t(334) = 3.39, p < .001$ ). Secondary psychopathy uniquely explained part of the sex difference in emotional jealousy (indirect effect  $\beta = .04, 95\% \text{ CI } [.004, .100]$ ). The two mediators together also explained part of the sex difference in emotional jealousy (indirect effect  $\beta = .08, 95\% \text{ CI } [.018, .164]$ ), but primary psychopathy was not a unique independent mediator (indirect effect  $\beta = .10, 95\% \text{ CI } [−.015, .225]$ ).

Further, primary psychopathy and secondary psychopathy fully mediated the relationship between participants' sex and the power/control motive (total indirect effect  $\beta = .37, 95\% \text{ CI } [.249, .519]$ ;  $R^2 =$

.15,  $F(3, 329) = 19.83, p < .001$ ), such that the total effect ( $\beta = .24, t(329) = 1.98, p = .05$ ) disappeared when the indirect effect was added (direct effect  $\beta = −.13, t(329) = −1.08, ns$ ). Primary psychopathy uniquely explained the sex difference in the power/control motive (indirect effect  $\beta = .26, 95\% \text{ CI } [.135, .407]$ ; as well as secondary psychopathy, although this effect was weaker (indirect effect  $\beta = .03, 95\% \text{ CI } [.004, .100]$ ). In addition, both primary and secondary psychopathy together mediated the influence of participants' sex on the power/control motive for jealousy induction (indirect effect  $\beta = .08, 95\% \text{ CI } [.009, .156]$ ).

### 3. Discussion

The aim of this study was to examine the relationships between the two factors of psychopathy, jealousy experiences, and jealousy induction. Generally, the pattern of our data supports previous findings which indicate that the two factors show opposing relationships (Reidy et al., 2013; Seara-Cardoso, Neumann, Roiser, McCrory, & Viding, 2012). One often reported striking difference between primary and secondary psychopathy is the absence of negative affect, specifically anxiety, in primary psychopathy (Del Gaizo & Falkenbach, 2008). Consistent with this, we found that independent of participants' sex, primary psychopathy was mainly associated with jealousy induction, for reasons to exact revenge or to obtain power over one's partner. In addition, fitting in with the impulsive, anxious, and reactive behavioral style reported for individuals with secondary psychopathic traits (Del Gaizo & Falkenbach, 2008; Yildirim & Derksen, 2015), we found this trait was associated with the experience of both forms of jealousy, as well as jealousy induction, motivated by a desire to test one's relationship or to gain self-esteem.

These results also lend support for the hypothesis put forward in the literature on subclinical psychopathy that primary psychopathy might be considered a successful defect-strategy (Ashton, Lee, & Son, 2000; Mealey, 1995; Jonason & Webster, 2012), characterized by manipulation and deceit in social interactions, and a lack of shame and guilt after a moral transgression (Jonason, Strosser, Kroll, Duineveld, & Baruffi, 2015; Lyons, 2015a). In contrast, secondary psychopathy is considered to be a more malleable trait, which develops as the result of a competitive disadvantage due to adverse socioecological circumstances (Mealey, 1995), causing impulsivity and a tendency for risk taking across different interpersonal domains (Lyons, 2015b). Our results thus highlight the importance of considering the multidimensionality of psychopathy, and of investigating both factors as variables.

A few sex differences emerged in our study, specifically, in experienced emotional jealousy and jealousy induction to obtain power. These sex differences were (partially) mediated by both psychopathy factors, suggesting that men's higher scores on these variables were attributable to their higher scores on the psychopathy factors. This finding replicates previous research (e.g. Jonason et al., 2009; Lyons, 2015b)

<sup>3</sup> In addition, because psychopathic tendencies might be affected by culture (e.g. Neumann, Schmitt, Carter, Embley, & Hare, 2012), we checked for moderation by nationality (i.e. American versus Non-American), but we did not find any systematic or coherent differences across nationality (all  $\beta$ s  $< .37$ , all  $ps > .07$ ). Therefore, we report results across nationalities.

<sup>4</sup> This model is not meant to be treated as developmental or causal.

**Table 2**Regression coefficients<sup>a</sup> and partial correlations using primary and secondary psychopathy to predict jealousy experience, jealousy induction, and jealousy induction motives.

	Primary psychopathy <sup>b</sup>			Secondary psychopathy <sup>c</sup>		
	$\beta$ (t)	Partial r		$\beta$ (t)	Partial r	
		Women	Men		Women	Men
Emotional jealousy	.13* (1.96)	.10	.13	.16* (2.49)	.08	.24*
Suspicious jealousy	.05 (.74)	.05	.03	.27** (3.99)	.13*	.39**
Jealousy induction	.17* (2.47)	.21**	.03	.26** (3.85)	.11	.36**
Testing	.05 (.73)	.08	-.05	.18* (2.56)	.12	.12
Revenge	.24** (3.39)	.21	.17	.08 (1.14)	-.01	.21*
Power/control	.30** (4.47)	.23**	.26*	.15* (2.22)	.08	.17
Security	.10 (1.39)	.09	.08	.11 (1.54)	.05	.10
Self-esteem	-.07 (-.94)	-.03	-.12	.22* (3.03)	.16*	.16

Note. t-value in parentheses; <sup>a</sup> Controlling for age and participants sex; <sup>b</sup> Controlling for secondary psychopathy; <sup>c</sup> Controlling for primary psychopathy.

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

showing that men generally tend to score higher than women do on “dark” traits, and especially on psychopathy. Indeed, the negative relational impact of psychopathy was previously established, and is characterized by a short-term relationship focus, controlling mate retention tactics, and exploitative behaviors (Jonason, Valentine, Li, & Harbeson, 2011; Jonason, Luevano, & Adams, 2012).

Primary and secondary psychopaths both resort to negative relationship maintenance strategies once their relationship is threatened. However, whereas it has been found that all jealousy induction strategies ultimately lead to dissatisfaction with one's relationship (Mattingly et al., 2012), our results indicate that primary psychopathic individuals were likely to induce jealousy in a calculated manner and out of malevolent reasons — that is, to gain leverage over their partner or to reciprocate a negative experience. Indeed, primary psychopaths are characterized by an exploitative and coercive mating style (Figueredo, Gladden, Sisco, Patch & Jones, 2015; Jonason, 2015), and in males, elevations in these traits have been found to cause increased distress in their relationship partners (Savard et al., 2006).

In contrast, our findings for secondary psychopaths indicate that they reported inducing jealousy to gain self-esteem, or to test or strengthen their relationship, and we suggest this is most likely because of insecurities about themselves or their relationship. This finding fits in with literature on secondary psychopathic individuals' response pattern, which is largely driven by negative urgency which is defined as the tendency to behave rashly and impulsively to reduce distress (Anestis, Anestis, & Joiner, 2009). With respect to relationship functioning, research indicates that secondary psychopathy traits both affect and are exacerbated by couple distress (Savard et al., 2006). Future research could explicitly focus on the relationship maintenance strategies of primary and secondary psychopathic individuals after a relationship threat, since even in the absence of such a threat, research has shown that being partnered with an individual with psychopathic traits has negative effects on one's relationship satisfaction and commitment (Smith et al., 2014).

#### 4. Limitations

Although these results are promising, the present research has some limitations. One of these is inherent to the study of psychopathy and emotions, that is, psychopaths are often inaccurate reporters of their own emotional and affective states (e.g. Hare, 2003). Moreover, jealousy is often regarded as an undesirable emotion, and participants may have underreported their true feelings and motivations. Thus, future research should control for socially desirable responding (Van Hooft & Born, 2012), and investigate the possibility of using implicit measures of emotions. A second limitation deals with our sample, specifically the low number of male participants. Although all cross-sectional results should be interpreted cautiously, this is the case especially for our male participants. Our small sample could explain the lack of associations found between the psychopathy factors and the motives for jealousy induction in

men. Future research could focus on identifying strategies of conflict resolution and relationship maintenance among partnered individuals with psychopathic personality traits, especially in the context of an ego-damaging experience like a partner's infidelity.

An additional limitation of the current research is that relationship variables such as duration, closeness, and satisfaction were left out of consideration. There are some indications that these variables influence, and are influenced by, individuals' jealousy experiences and use of jealousy induction (e.g. Aune & Comstock, 1997). In addition to taking relationship variables into account, future research should also focus on strengthening emotion regulation and inhibitory control among individuals with (secondary) psychopathic traits. Moreover, it seems crucial to include the partner in such interventions. Research indicates that especially in the case of infidelity and jealousy experiences, couple therapy will be most effective when it contains intrapersonal therapeutic interventions such as building self-esteem, as well as a relationship-specific focus, for example by exploring issues related to power (White, 2008).

#### 5. Conclusion

The current study adds to the growing body of literature on subclinical psychopathy and its influence on relationship dynamics. Specifically, our results add support to expectations that there are affective differences in primary and secondary psychopaths, with secondary psychopaths experiencing greater emotional reactivity, and thus, greater levels of jealousy. With regard to the use of jealousy induction as a mate retention strategy, we found support for the manipulative and exploitive tendencies of primary psychopaths, and the anxious, insecure behavioral style of secondary psychopaths. This research, thus, emphasizes the importance of considering both factors of psychopathy separately in future studies.

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