

# Differential Reproductive Behavior Patterns Among the Dark Triad

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**Abstract** The traits that the Dark Triad of personality (psychopathy, Machiavellianism, and narcissism) are overlapping but distinctive. Although some have assumed that all three are universally associated with unrestricted sociosexuality, proper statistics on adult samples have not confirmed these assumptions. Latent variable techniques examined the relationships among Dark Triad and different aspects of sociosexuality across two adult samples ( $N=1116$ ). With the original Dark Triad measures, a common path model was a marginal fit to the data. However, adding theoretically based additional paths (most especially a negative link between Machiavellianism and short-term sexual behavior behavior) increased the model fit beyond chance, and these additions replicated in a new sample with different measures. The findings support the notion that the Dark Triad are not universally short-term. In particular, Machiavellianism is negatively associated with short-term sexual behavior, underscoring the cautious nature of the trait.

**Keywords** Dark Triad · Sociosexuality · Mating strategies · Life history strategy · Psychopathy · Machiavellianism · Narcissism

The “Dark Triad” refers to three commonly studied personality traits in the realm of interpersonal harm: psychopathy, Machiavellianism, and narcissism (Paulhus and Williams 2002). All three traits have been associated with unrestricted

sociosexuality. For example, the Dark Triad have been found to (a) be driven by lust rather than love (Harms et al. 2001), (b) engage in an exploitative short-term sexual strategy (Jonason et al. 2009), (c) report hostile and promiscuous sexual attitudes (McHoskey 2001), and (d) report a willingness to engage in uncommitted relationships (Reise and Wright 1996). Given that these traits share a common element of callous-manipulation (Jones and Figueredo 2013), it does indeed seem reasonable that the Dark Triad traits would be associated with increased sexual activity.

Jonason et al. (2012) argued that all three Dark Triad traits are imperfect indicators of a common short-term sexual strategy. In their research on the Dark Triad and sociosexuality, Jonason et al. (2009) found that a common factor model of the Dark Triad mediated the relationship between sex and short-term mating. Indeed, a manipulative disposition is consistent with short-term sexual strategies—as false signaling and deception seems to compliment short-term sexual aspirations (Rowe et al. 1997; Seto et al. 1995). Moreover, such manipulation may help in achieving these encounters (Jonason et al. 2009). Thus, the idea that the Dark Triad traits are linked with short-term sexual behaviors initially makes sense.

However, *willingness* to engage in short-term sexual encounters is not redundant with *acting* upon that willingness (Penke and Asendorpf 2008; Webster and Bryan 2007). For example, Machiavellian individuals may have permissive attitudes towards short-term encounters (as do all three Dark Triad traits), but unlike other Dark Triad traits, they exercise caution with respect to actual behaviors. Psychopathy, on the other hand, is defined (in part) by unrestricted sociosexuality and short-term thinking (Hare 2003; Lilienfeld and Andrews 1996). Individuals high in psychopathy lack impulse control, leading to risky short-term behaviors. Such impulsivity is exacerbated by the fact that individuals high in psychopathy engage in coercion (e.g., Eisenberg et al. 2007; Simpson

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et al. 2004). Such impulsive and coercive tactics are used by individuals high in psychopathy even when they pose long-term costs (e.g., Camilleri et al. 2009; Harris et al. 2007; Jones and Olderbak 2014; Lalumière and Quinsey 1996).

### Psychopathy is Uniquely Short-Term Among the Dark Triad with Respect to Mating

*Life History Strategy* or LHS asserts that all organisms fall on a continuum from slow (i.e., high parental effort and somatic effort) to fast (i.e., high reproductive effort) (see Figueredo et al. 2006 for review). Psychopathy has been clearly linked with a fast LHS (Mealey 1995). Jonason et al. (2010a, 2010b) provided further evidence supporting Mealey's theory, finding that subclinical psychopathy was associated with a fast LHS (Mealey 1995). Consistent with theory on LHS, psychopathy is linked with short-sighted approaches to relationships (Cleckley, 1941), poor attachment with loved ones (Mack et al. 2011) and a reckless and erratic lifestyle (Newman 1987; Williams et al. 2007).

Like psychopathy, Machiavellianism is a cheater strategy (Wilson et al. 1996) that is linked with direct manipulation (Christie and Geis 1970). However, unlike those high in psychopathy, individuals high in Machiavellianism show concern over their reputation (Jones and Paulhus 2011a) and exercise caution when it comes to misbehavior (Cooper and Peterson 1980). In fact, Machiavellian individuals have neurological responses across social situations that suggest a cautious approach to interpersonal manipulation (Bereczkei et al. 2013). These findings contradict the notion that Machiavellianism would be associated with impulsive or short-term behaviors (Jones 2016). In fact, when properly assessed, Machiavellianism has no unique link with impulsivity (Jones & Paulhus 2011b) or short-term thinking (Jonason and Tost 2010). Thus, although Machiavellian individuals may be fine with casual sex from an attachment perspective (e.g., Brewer et al. 2013), they are unlikely to engage in risky short-term behaviors because of their caution.

Finally, narcissism is a cheater strategy associated with self-deception rather than other-deception (von Hippel and Trivers 2011), although it should be noted that narcissism has been linked with direct interpersonal manipulation as well (Jones and Figueredo 2013). Narcissistic individuals are impulsive in an overconfident, but not reckless, fashion (Jones & Paulhus, 2011b). Further, narcissistic individuals are focused on cultivating social praise (Morf and Rhodewalt 2001). In this way, it is unclear how they would behave sexually because one could make an argument that social praise could come from both short- and long-term relationship success. Thus, they would certainly be open to short-term causal affairs, so long as those affairs brought them social praise. As such, individuals high in narcissism may or may not engage in

short-term sexual behaviors, but their motivations for doing so are potentially more diverse.

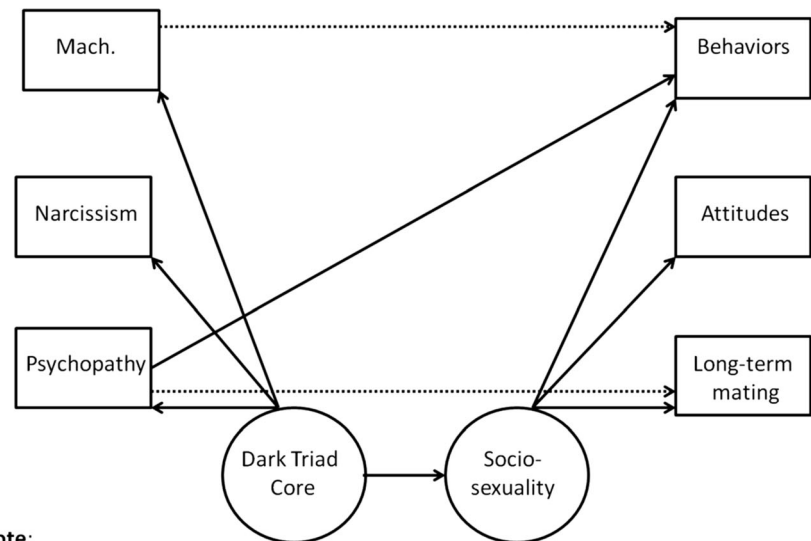
Theoretical and empirical distinctions between Machiavellianism and psychopathy suggest that any putative direct link from the Dark Triad to short-term sexual behavior may be an oversimplification. In fact, this assumption may only be true when there are no consequences. Under typical circumstances, however, short-term sexual pursuits carry consequences ranging from health to reputational concerns (e.g., Vasilenko et al. 2012). As a result, the Dark Triad should show different patterns of association with sociosexuality in line with the unique characteristics of each Dark Triad trait.

### Summary and Predictions

As Furnham et al. (2013) noted, there are significant differences among the three Dark Triad traits. Although they have all been linked with sociosexuality, there are reasons to believe that Machiavellianism and psychopathy differ in their short-term sexual behaviors. Further, psychopathy should also have a negative link with long-term mating, given that such individuals should be exclusively short-term (Mealey 1995). Thus, the goal of the present research is to properly re-examine the relationship between Dark Triad and sociosexuality. Previous research on this particular topic has been plagued by statistical issues such as not controlling for the overlap among the Dark Triad variables (see Furnham et al. 2014, for review; see also Jonason et al. 2011). Further, from a theoretical perspective, the Dark Triad traits are not common elements of an over-arching factor (Glenn and Sellbom 2015). Finally, if the Dark Triad traits are imperfect reflections of a common sexual strategy (i.e., Jonason et al. 2012), what would account for their differences?

We tested two competing models across two separate samples ( $N=1116$ ). The first model tested a common latent path linking the Dark Triad traits and sociosexuality (Jonason et al. 2009). An alternative model, based on aforementioned theory, added three unique paths: Machiavellianism with short-term sexual behaviors, psychopathy with short-term sexual behaviors, and psychopathy with long-term mating (see Fig. 1 for model predictions). Specifically, due to the cautious nature of Machiavellianism, we predicted a *negative* path to sexual behaviors. We also predicted that psychopathy would have a *positive* relationship with sexual behaviors and a *negative* relationship with long-term mating. Finally, we made no strong predictions about narcissism. However, for the purposes of exploration, we tested a model with a unique path from narcissism to all three sociosexuality facets.

All model tests, including nested model comparisons, were then conducted in the *R* package “lavaan” (Rosseel, 2012). Further, within these two models *Multi-Group Structural Equations Models* (MG-SEMs) were conducted to compare

**Fig. 1** Predicted model**Note:**

Solid lines indicate predictions of positive association, dotted lines indicate predictions of negative associations.

model fit across men and women. In both samples, we predicted that the alternative model would out-perform the common pathway model (Figueredo, Gladden, Sisco, Patch, & Jones, 2015; Jonason et al. 2011). The gender comparisons were exploratory, and thus, no strong predictions were made.

### Study 1—Original Measures of the Dark Triad

#### Method

##### Participants

A total of 758 participants volunteered on Amazon's MTurk. However, 96 failed attention checks (e.g., “*I breathe oxygen every day*”), and were removed, leaving a total of 662 participants (239 men, 423 women; Mean age = 30.73, SD = 10.31; 71 % European Heritage, 14 % East Asian, 5 % Latino/Latina, 4 % African heritage 6 % other; 71 % in a romantic relationship). Mechanical Turk is a valuable source of research subjects and produces data that matches student sample reliability, but surpasses student samples in variety and variability (Buhrmester et al. 2011; Paolacci et al. 2010).

##### Measures

Unless otherwise indicated, all Likert-type items were assessed on a scale of 1 (*strongly Disagree*) to 5 (*strongly Agree*) with appropriate items reverse scored and were averaged into composites.

**Psychopathy** Psychopathy was assessed using the Self-Report Psychopathy Scale (SRP; Paulhus et al. *in press*).

The SRP is a 64-item assessment consisting of four inter-correlated facets: Interpersonal Manipulation (IPM; e.g., “*I would get a kick out of ‘scamming’ people.*”) Callous Affect (CA; e.g., “*People sometimes say that I am cold-hearted.*”), Erratic Lifestyle (ELS; e.g., “*I’ve done something dangerous just for the thrill of it.*”), and Antisocial Behavior (ASB; e.g., “*I have been involved in gang activity.*”). The SRP total score was internally consistent ( $\alpha = .91$ ).

**Machiavellianism** To measure Machiavellianism, the popular MACH-IV was used (Christie and Geis 1970). All 20 items (e.g., “*It is wise to flatter important people.*”) were averaged into a composite, which was internally consistent ( $\alpha = .83$ ). The MACH-IV remains the most widely cited instrument for assessing Machiavellianism (Jones and Paulhus 2009).

**Narcissism** Narcissism was measured using the Narcissistic Personality Inventory (NPI; Raskin and Hall 1979). The NPI uses a 40-item forced-choice format where subjects choose which item (A or B) is more descriptive of the self. Items (e.g., “*I love to look at myself in the mirror.*”) were scored as follows: *Narcissism item* = 1, *non-narcissism item* = 0. The total score was internally consistent ( $\alpha = .87$ ).

**Multidimensional Sociosexual Orientation Inventory (MSOI)** To measure reproductive strategies, the MSOI was used (Jackson and Kirkpatrick 2007). The MSOI consists of 25 items that break into three factors of sociosexuality: short-term attitudes, long-term mating, and sexual behaviors. The STA and LTA subscales were each 10 items, and those items were merged to form composites that were internally consistent ( $\alpha$ 's > .90). The five items (*number of lifetime partners*, *number of partners in a year*, *number of partners on one*

occasion, number of desired future partners, frequency of sexual fantasies) were all scored from 0 to 11+ and standardized prior to averaging ( $\alpha = .73$ ).

### Results and Discussion

The descriptive statistics for both studies can be found in Table 1. The inter-correlations of all variables can be found in Table 2. For both structural equations models (SEMs), the three Dark Triad means were set to load to a common factor, and the three MSOI composites were set to load to a common factor. The first SEM (see Fig. 2) regressed on the latent MSOI factor onto the latent Dark Triad factor. The overall fit was acceptable according to most cut-off scores, with the RMSEA being marginal (see Marsh et al. 2004), ( $\chi^2 = 32.09, p < .001, CFI/TLI = .971/.946; RMSEA = .069; SRMR = .035$ ).

Based on our review of the literature above, and as can be seen in Fig. 1, we predicted three additional paths to be significant: Machiavellianism with sexual behavior (negative), psychopathy with sexual behavior (positive), and psychopathy with long-term mating (negative). Because we made no strong predictions about narcissism, we tested a direct path from narcissism to all three facets of sociosexuality. The path from narcissism to sexual behaviors was not significant and was not predicted; thus, it was dropped from further analyses, the same was true for the link between narcissism and sociosexual attitudes (although it is worth noting that this association was marginal:  $\beta = -.08, p = .073$ ). Interestingly, the path from narcissism to long-term mating was significant ( $\beta = .10, p = .025$ ); thus, we retained this path in the final model (see

**Table 2** Inter-correlations among the Dark Triad and sociosexuality

	1	2	3	4	5	6	7
1. Psychopathy	–	.38*	.52*	.36*	.29*	.34*	-.27*
2. Narcissism	.47*	–	.35*	.02	.09	.09	-.03
3. Machiavellianism	.63*	.32*	–	.20*	.07	.29*	.04
4. SOI attitudes	.47*	.19*	.35*	–	.57*	.61*	-.41*
5. SOI behaviors	.26*	.15*	.10*	.53*	–	.46*	-.39*
6. SOI fantasies	–	–	–	–	–	–	-.36*
7. Long-term mating	-.31*	-.09*	-.24*	-.38*	-.28*	–	–

Note: \* $p < .05$ . Study 1 ( $n = 662$ ) is below the diagonal, study 2 ( $n = 454$ ) is above

Fig. 3). In sum, the final model included the common pathway plus four unique paths: Machiavellianism to sexual behavior, narcissism to long-term mating, psychopathy to both sexual behavior, and long-term mating.

The overall model fit ( $\chi^2 = 6.03, p = .197, CFI/TLI = .998/.992; RMSEA = .028; SRMR = .015$ ). However, note that a nested model comparison is needed to determine if the alternative model ( $df = 4, AIC = 6402.5, BIC = 6510.2, \chi^2 = 6.02$ ) is truly an improvement over the common path model ( $df = 8, AIC = 6425.6, BIC = 6510.2, \chi^2 = 37.13$ ). A chi-square nested model comparison indicated that the alternative model was indeed an improvement ( $\chi^2$  Difference = 25.09,  $p < .001$ ). Note that, consistent with predictions, Machiavellianism was negatively associated with short-term sexual behaviors and psychopathy was negatively associated with long-term mating. Inconsistent with predictions, however, psychopathy was not significantly associated with sexual behaviors.

**Table 1** Descriptive statistics for studies 1 and 2

Variable	Men Mean (SD)	Women Mean (SD)	<i>t</i>
Study 1 ( $n = 662$ )			
Short-term attitudes	3.23 (1.04)	2.44 (1.07)	9.20*
Long-term attitudes	4.07 (0.81)	4.29 (0.76)	-3.65*
Sexual behaviors	3.62 (1.99)	2.94 (1.64)	4.52*
Psychopathy (SRP)	2.50 (0.47)	2.23 (0.40)	7.71*
Narcissism (NPI)	0.38 (0.19)	0.31 (0.19)	4.75*
Mach. (Mach-IV)	2.89 (0.51)	2.77 (0.47)	2.99*
Study 2 ( $n = 454$ )			
Short-term attitudes	5.45 (2.29)	3.75 (2.38)	7.74*
Long-term attitudes	6.74 (1.44)	7.05 (1.53)	-2.21*
Sexual behaviors	3.00 (1.90)	2.41 (1.48)	3.67*
Sexual fantasies	4.71 (2.25)	2.55 (1.55)	11.85*
SD3: Psychopathy	2.52 (0.57)	2.10 (0.59)	7.71*
SD3: Narcissism	2.94 (0.56)	2.74 (0.63)	3.69*
SD3: Mach.	3.41 (0.62)	3.08 (0.65)	5.46*

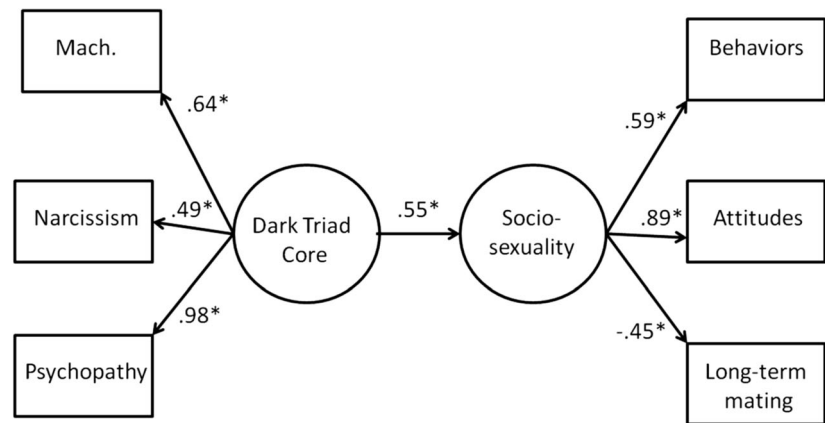
Note: \* $p < .05$

### Gender Comparisons

We then tested differences between men and women<sup>1</sup> within model (see Tables 3 and 4). The common path model was equally predictive for both men and women for SEM loadings ( $\chi^2$  difference = 4.074;  $p = .396$ ) and intercepts ( $\chi^2$  difference = 8.931;  $p = .06$ ), but not means ( $\chi^2$  difference = 84.56;  $p < .001$ ) suggesting that the common factor of the Dark Triad operates similarly for men and women in when predicting sociosexuality (see Table 3). The alternative model was also structurally equivalent across men and women at the loadings level ( $\chi^2$  difference = 8.991;  $p = .061$ ), and at the intercepts ( $\chi^2$  difference = 6.85;  $p = .144$ ), but not at the means ( $\chi^2$  difference = 87.45;  $p < .001$ ). Thus, both models showed structural differences at the mean level,

<sup>1</sup> Note that we asked whether participants were “male” or “female,” thus asking them the gender with which they identified. We did not conduct DNA tests to determine biological sex; thus, we use the term “gender” throughout the manuscript.

**Fig. 2** Study 1 common path model of the dark triad and sociosexuality



**Note:** \* $p < .05$ , † $p < .065$ .

Solid lines indicate predictions of positive association, dotted lines indicate predictions of negative associations.

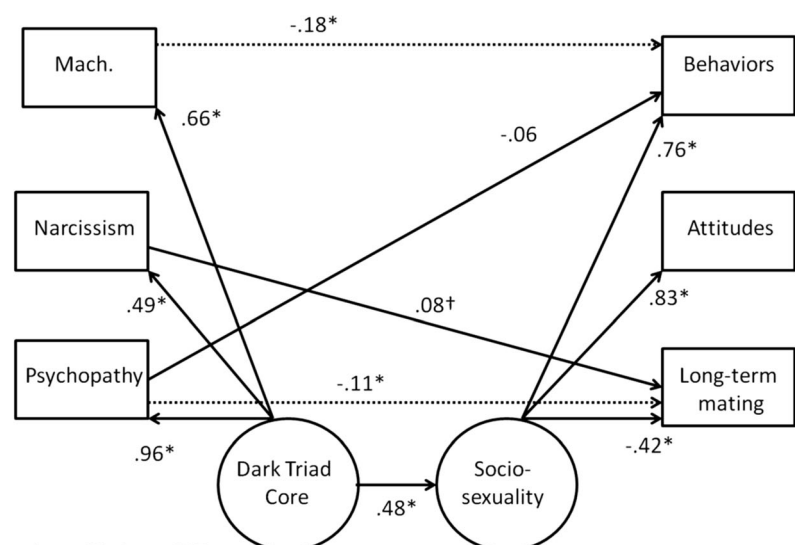
which would be expected from previous research (e.g., Jonason et al. 2009). Further, the negative link between Machiavellianism and short-term sexual behavior was significant for both men ( $\beta = -.31$ ,  $p < .001$ ) and women ( $\beta = -.13$ ,  $p = .011$ ). However, the findings with long-term mating (narcissism:  $\beta = .15$ ,  $p = .022$ ; psychopathy:  $\beta = -.22$ ,  $p = .017$ ) were only significant in men (see Table 4).

### Study 2—Short Dark Triad

Although study 1 showed that additional paths do improve model fit when predicting sociosexuality from

the Dark Triad, there are several reasons why a replication would be beneficial. First, the original measures of the Dark Triad are just one method of operationalizing these constructs. Thus, finding the results replicated in a different sample using different measures would increase our ability to generalize the findings. Further, recent research has called into question whether the Mach-IV is an appropriate assessment of Machiavellianism (Miller et al. *in press*). Thus, a replication with a newer measure of the Dark Triad seemed appropriate. Second, sociosexuality assessment has also been improved upon (Penke and Asendorpf 2008), with more common sense metrics. Thus, we used these newer assessments of both sociosexuality

**Fig. 3** Study 1 alternative model of the dark triad and sociosexuality



**Note:** \* $p < .05$ , † $p < .065$ .

Solid lines indicate predictions of positive association, dotted lines indicate predictions of negative associations.

**Table 3** Separate MG-SEM Loadings for men and women for the common path model

	Study 1		Study 2	
	Men	Women	Men	Women
<b>Dark Triad loadings</b>				
Mach	.67*	.63*	.56*	.53*
Psychop.	.99*	.95*	.95*	.82*
Narcissis.	.42*	.50*	.31*	.51*
<b>Sociosexuality loadings</b>				
Short-term attitudes	.80*	.90*	.87*	.75*
Sexual behaviors	.54*	.63*	.70*	.68*
Long-term mating	-.39*	-.46*	-.53*	-.52*
Sexual fantasies	–	–	.68*	.68*
<b>Beta weights</b>				
Sociosexuality on Dark Triad	.52*	.49*	.32*	.43*

Note: \* $p < .05$

and the Dark Triad in a different sample to determine the reliability of the study 1 findings.

## Method

### Participants

We recruited 545 new participants for a study on personality and behavior. Once again attention checks flagged 91

**Table 4** Separate MG-SEM loadings for men and women for the alternative Mmodel

	Study 1		Study 2	
	Men	Women	Men	Women
<b>Dark Triad loadings</b>				
Mach	.70*	.63*	.60*	.57*
Psychop.	.95*	.94*	.89*	.76*
Narcissis.	.43*	.51*	.33*	.55*
<b>Sociosexuality loadings</b>				
Short-term attitudes	.75*	.86*	.86*	.76*
Sexual behaviors	.75*	.72*	.72*	.65*
Long-term mating	-.28*	-.46*	-.48*	-.43*
Sexual fantasies	–	–	.68*	.70*
<b>Beta weights</b>				
Sociosexuality on Dark Triad	.66*	.53*	.33*	.39*
Sexual behaviors on Mach	-.31*	-.13*	-.13*	-.16*
Long-term mating on Psychopathy	-.22*	-.05	-.11	-.18*
Long-term mating on narcissism	.15*	.03	.16*	.06
Sexual behaviors on psychopathy	-.18	-.02	.03	.15*

Note: \* $p < .05$

participants with inappropriate responses indicating a lack of attention, leaving a final sample of 454 (51 % Women; Mean age = 32.65, SD = 10.80; 56 % White/Caucasian; 23 % South Asian; 4 % Black/African heritage; 5 % East Asian, 12 % Other; 62 % reported being in a current relationship). Note that these attrition rates are within the typical parameters of samples drawn from MTurk (Deetlefs et al. 2015).

**Sociosexual Orientation Inventory—Revised** We used the SOI-R (Penke and Asendorpf 2008) to examine sociosexuality using a different operational definition. The major difference with the SOI-R as compared to the original SOI or the MSOI is that three items are used to capture three facets (attitudes, behaviors, and fantasies) all on a 9-point Likert-type scale. The internal consistencies of all three of these facets were acceptable (attitudes  $\alpha = .83$ ; behaviors  $\alpha = .78$ ; fantasies  $\alpha = .89$ ).

**Long-term Mating** Because we still feel that long-term mating is imperative to study within the context of the Dark Triad and reproductive approach, we used three items (in order to maintain symmetry with the SOI-R) from the MSOI to assess long-term mating (these were items 15, 16, and 18 on the MSOI scale; e.g., “I can easily see myself engaging in a long-term romantic relationship with someone special.”). In spite of being only three items, the composite score had acceptable internal consistency ( $\alpha = .84$ ).

**Dark Triad** We assessed the Dark Triad in brief fashion using the *Short Dark Triad* or SD3 (Jones and Paulhus 2014). The SD3 has good convergent validity with the original Dark Triad measures (Maples et al. 2014), using nine items per trait to capture each construct (e.g., Psychopathy: “I’ll say anything to get what I want.” Machiavellianism: “It’s not wise to share your secrets.” Narcissism: “I insist on getting the respect I deserve.”). The internal consistencies were all acceptable (psychopathy  $\alpha = .72$ ; Machiavellianism  $\alpha = .77$ ; narcissism  $\alpha = .76$ ).

## Results and Discussion

Table 2 reports the inter-correlations among study 2 variables. We set up similar SEMs based on study 1, with a fourth component (sexual fantasies) added to the model. The common path model did not fit the data ( $\chi^2 = 70.736$ ,  $p < .001$ ; CFI/TLI = .933/.891; RMSEA = .099; SRMR = .053). The alternative model was also a poor fit ( $\chi^2 = 57.876$ ,  $p < .001$ ; CFI/TLI = .945/.896; RMSEA = .091; SRMR = .045). However, using nested model comparisons, the alternative model ( $df = 9$ ; AIC = 9354.5; BIC = 9461.6;  $\chi^2 = 48.04$ ,  $p < .001$ ) was a significant improvement over the common path model ( $df = 13$ ; AIC = 9369.2; BIC = 9459.8;  $\chi^2 = 70.736$ ,  $p < .001$ ).

with a significant chi-square difference test ( $\chi^2$  difference = 20.81,  $p < .001$ ). Figure 4 shows the common pathway model, and Fig. 5 shows the alternative model. Once again, Machiavellianism was negatively associated with short-term sexual behaviors, which replicated study 1. However, contrary to predictions, psychopathy had no association with long-term mating (similar to study 1).

It is worth noting that an exploration into why the fit of the alternative model was still poor, we explored the possibility of additional paths. Indeed, three additional paths were significant: Machiavellianism and long-term mating (positive), and narcissism with short-term attitudes (negative) and sexual fantasies (negative). This exploratory model is displayed in Fig. 6, and had the best overall fit ( $\chi^2 = 28.58$ ,  $p < .001$ ; CFI/TLI = .972/.927; RMSEA = .075; SRMR = .037). However, we did not predict any of these paths, and these associations did not emerge in study 1 (although recall that the short-term attitudes and narcissism link were marginal in study 1;  $\beta = -.08$ ,  $p = .073$ ). Thus, these findings should be interpreted with caution.

Nevertheless, the fact that Machiavellianism (as assessed in the SD3) was associated with long-term mating may reflect the more long-term and strategic nature of the trait (i.e., Miller et al. in press). Thus, some of the issues raised about the Mach-IV (which was used in study 1), such that it is too similar to psychopathy measures, may be important to consider (Miller et al., in press).

### Gender Comparisons

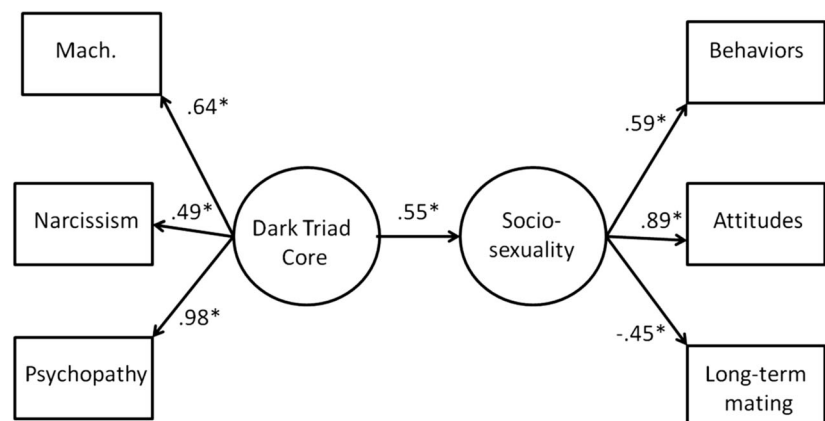
Once again, we compared men and women within each model using two MG-SEMs (see Tables 3 and 4). The findings indicated that neither the common pathway model nor the alternative model was equivalent across gender even at the loading stage, with both  $\chi^2$  differences exceeding 18.00 ( $ps < .001$ ). In

the alternative model, the negative path between Machiavellianism and short-term sexual behaviors was significant for both men ( $\beta = -.13$ ,  $p = .037$ ) and women ( $\beta = -.16$ ,  $p = .008$ ). However, only narcissism remained a significant predictor of long-term mating in men ( $\beta = .16$ ,  $p = .010$ ), whereas only psychopathy ( $\beta = -.18$ ,  $p = .010$ ) remained a significant (negative) predictor of long-term mating in women. Further, psychopathy ( $\beta = .15$ ,  $p = .018$ ) was a significant positive predictor of sexual behavior in women, but not in men.

### General Discussion

The purpose of this paper was to clarify the relationship that the Dark Triad traits had with different reproductive strategies as defined by sociosexuality facets. Importantly, Machiavellianism stands out among the Dark Triad in a key way: It has a negative link with short-term sexual behaviors. This finding was consistent across men and women and across both samples. This finding underscores the cautious nature of the Machiavellianism trait, and its unique relationship in the sociosexuality spectrum. We further predicted that psychopathy would have a negative link with long-term mating orientation. However, this prediction was only supported in men. Further, psychopathy was predicted to have a unique positive path to sexual behaviors, but that finding also did not emerge for men (only for women in study 2). Thus, there is some doubt as to whether psychopathic individuals are truly and universally short-term in their mating orientation. Further research on psychopathy is therefore needed to examine men and women separately in mating orientations. Finally, narcissism had a positive link with long-term mating. Although not predicted, this finding may reflect the idea that individuals may be socially praised for successful relationships. Nevertheless, the data do strongly demonstrate that the Dark

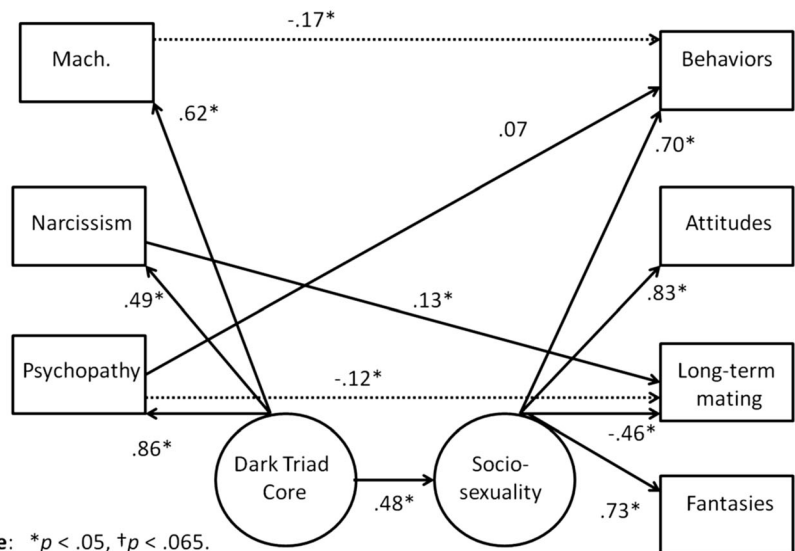
**Fig. 4** Study 2 common path model of the dark triad and sociosexuality



**Note:** \* $p < .05$ , † $p < .065$ .

Solid lines indicate predictions of positive association, dotted lines indicate predictions of negative associations.

**Fig. 5** Study 2 alternative model of the dark triad and sociosexuality



**Note:**  $*p < .05$ ,  $†p < .065$ .  
 Solid lines indicate predictions of positive association,  
 dotted lines indicate predictions of negative associations.

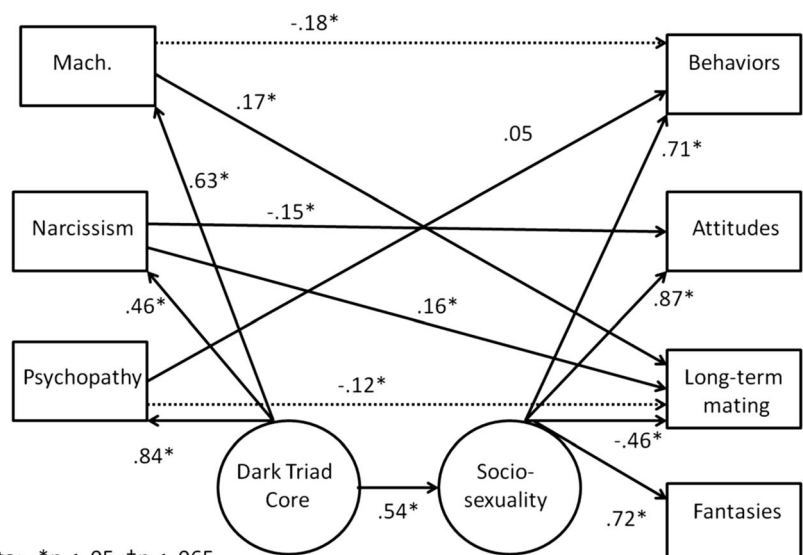
Triad traits are (a) not reflections of the same sexual or social strategy and (b) cannot be combined into a composite (Glenn and Sellbom 2015).

Against the backdrop of the construct definitions, the literature on Machiavellianism does indicate that such individuals are more interested in money and power than they are in accumulating sexual partners (Wilson et al. 1996). Likewise, individuals high in narcissism are most interested in social praise (Morf and Rhodewalt 2001). Although social praise, money, and access to sexual partners are commonly correlated, it seems that the Dark Triad traits are focused on different goals.

It is interesting to note that both the alternative and common path models were structurally equivalent across

men and women for loadings and intercepts in study 1. Although there was no equivalence across men and women for study 2, there may be some question as to how idiosyncratic the Dark Triad common factor is to men. The present research merely explored these unique associations among men and women. Future research is needed to replicate and confirm these unique gender links between the Dark Triad and sociosexuality. Further, future research is also needed to explore these links under different conditions. For example, when expecting social praise for short-term sexual encounters, narcissism may out-predict all other Dark Triad traits in short-term sexual behaviors. However, when expecting social scorn, the reverse pattern may emerge. Future

**Fig. 6** Exploratory model for study 2



**Note:**  $*p < .05$ ,  $†p < .065$ .  
 Solid lines indicate predictions of positive association,  
 dotted lines indicate predictions of negative associations.



research should also track individuals in longitudinal fashion. Thus, the cross-sectional nature of the data should be considered a potentially problematic limitation.

The findings of the present research bring to light two key messages with respect to the Dark Triad and sociosexuality. The first finding, which is that Machiavellianism is negatively associated with short-term sexual behaviors, speaks to the cautious nature of the Machiavellianism trait. The second finding, which is that there are differences among the Dark Triad with respect to sociosexuality, suggests that the notion of the Dark Triad reflecting a common social or sexual strategy needs revision. Thus, the Dark Triad are unique at the mating level and future research should build on this finding to determine when and how these traits will differ in other contexts.

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