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The emotional deficits associated with the Dark Triad traits: Cognitive empathy, affective empathy, and alexithymia

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ABSTRACT

Volunteers ($N = 322$) in an online survey revealed the complex correlational patterns between the Dark Triad traits and two forms of "emotional deficiencies" (i.e., limited empathy and alexithymia) overall and in each sex. Each Dark Triad trait was associated with a unique pattern of emotional deficits. Psychopathy was correlated with limited overall empathy, difficulty describing feelings, and externally oriented thinking. Narcissism was associated with limited affective empathy and difficulty identifying feelings, whereas Machiavellianism was associated with externally oriented thinking. The Dark Triad mediated sex differences in empathy and externally oriented thinking. Structural Equation Modeling suggests that the differential facets of alexithymia predict different forms of limited empathy that in turn predict specific Dark Triad traits. Results are discussed using an evolutionary paradigm.

1. Introduction

Machiavellianism, narcissism, and psychopathy (i.e., the Dark Triad; Paulhus & Williams, 2002) have repeatedly been identified as aversive personality traits (Kowalski, 2001) characterized by entitlement, superiority, dominance (i.e., narcissism), glib social charm, manipulativeness (i.e., Machiavellianism), callous social attitudes, impulsivity, and interpersonal antagonism (i.e., psychopathy). Recently, some attention—albeit limited—has been given to the notion that emotional deficiencies, such as a lack of empathy, may be the critical factors underlying these personality traits (Jonason, Lyons, Bethell, & Ross, 2013) and the condition known as alexithymia (i.e., the inability to describe and understand one's own emotions; Nemiah & Sifneos, 1970) might be linked to the Dark Triad (Cairncross, Veselka, Schermer, & Vernon, 2013); both of which are linked (Swart, Kortekaas, & Aleman, 2009).

We hope to address a number of limitations of prior work. First, empathy is considered to be a multidimensional construct consisting of both affective and cognitive components, which have discrete neural and behavioral correlates (Shamay-Tsoory, Aharon-Peretz, & Perry, 2009). However, few studies have examined the Dark Triad's relationship with different facets of empathy (for an exception see Wai & Tiliopoulos, 2012) and the research tends to focus on one of the Dark Triad traits (e.g., Brook & Kosson, 2013). Second, most studies examining the relationship between the Dark Triad and alexithymia have examined the traits on their own (e.g., Wastell & Booth, 2003). Third, many of these studies used criminal or incarcerated populations (e.g., Glass & Newman, 2006). Fourth, despite these two emotional deficits being linked (Swart et al., 2009), they have not been studied concurrently to date. Fifth, most work on the Dark Triad and on limited empathy or alexithymia treats them in a clinical or disordered framework (Kowalski, 2001; Wastell & Booth, 2003). In contrast, we take a multidimensional, evolutionary account of these traits in a non-clinical population.

Evolutionary psychologists argue that traits and dispositions like the Dark Triad and limited empathy (Jonason, Webster, Schmitt, Li, & Crysel, 2012; Jonason et al., 2013) could be adaptive so long as they afford individuals greater reproductive returns and access to resources (Buss, 2009). Indeed, certain qualities traditionally considered maladaptive may actually provide a competitive advantage by facilitating behavior associated with the attainment of goals that require exploitation of conspecifics (Jonason & Webster, 2012). Despite undesirable outcomes, the Dark Triad traits might facilitate an evolutionary advantageous short-term mating strategy (Jonason, Valentine, Li, & Harbeson, 2011) and the active exploitation of others through a wide range of tactics of influence (Jonason & Webster, 2012). A disregard of one's own or others' feelings may be mechanisms by which this is achieved.

Empathy is central to social awareness, with affective empathy involving the capacity to experience the emotions of another and cognitive empathy encompassing the understanding of others' emotional states (Jolliffe & Farrington, 2006). Empathy deficits

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are considered a fundamental aspect of Dark the Triad traits (Jonason et al., 2013). However, this relationship appears to be localized to the affective component of empathy, with the association between cognitive empathy and the Dark Triad traits more equivocal (Wai & Tiliopoulos, 2012). Thus, while we expect all of the Dark Triad traits to be associated with limited affective empathy—with this relationship particularly strong for psychopathy (Wai & Tiliopoulos, 2012)—cognitive empathy will only be related to psychopathy (Brook & Kosson, 2013).

An emotional deficit related to empathy is alexithymia (Swart et al., 2009), or the inability to describe one's feelings (Nemiah & Sifneos, 1970); this condition literally translates to "no words for emotions". However, much of the work on this construct comes from the psychoanalytic tradition and lacks a good operational definition. More recent conceptualizations from the socio-cognitive tradition consider alexithymia to have three parts: difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking (Bagby, Parker, & Taylor, 1994). Indeed, these three aspects of alexithymia are correlated with the Dark Triad (Cairncross et al., 2013). We predict these correlations will be positive for all three traits—although localized to different aspects of alexithymia[1]—in as much as the Dark Triad traits are imperfect measures of the same or a similar coordinated set of adaptations for exploitation (Jonason et al., 2012).

Although the psychoanalytic and sociocognitive perspectives consider alexithymia to be maladaptive, an evolutionary perspective would suggest alexithymia may be adaptive under certain conditions, in that it could facilitate the exploitative social strategy linked to the Dark Triad. In other words, a rich emotional life and ability to communicate those feelings may actually interfere with the active exploitation of others, similar to limited empathy (Jonason et al., 2013). Therefore, we expect the Dark Triad traits to be correlated with alexithymia and limited empathy and, because psychopathy is considered the darkest of the three traits (Rauthmann, 2012), we expect these relationships to be strongest in psychopathy.

Compared to women, men score consistently higher on Dark Triad traits (Jonason & Webster, 2010) and alexithymia (Wastell & Taylor, 2002), and lower on empathy (Baron-Cohen & Wheelwright, 2004). Identifying sex differences is merely the beginning of a research program, begging the question of the psychological mechanisms and preconditions that underlie sex differences. Both sexes utilize selfish and exploitative goal-directed strategies (Jonason & Schmitt, 2012), but differential evolutionary needs may have created disparate correlates and underlying mechanisms behind these strategies, with varying levels of emotional connectedness being required for men and women to achieve their goals. For instance, past research suggests men may lack empathy through psychopathy and women may lack empathy through narcissism (Jonason et al., 2013). This may represent different adaptive strategies; men adopting an exploitative (riskier) approach, while women adopt a parasitic (less risky) approach (Jonason & Schmitt, 2012). The resulting low empathy in each sex with high scores on these traits might then be a case of convergent evolution for different social adaptations. Therefore, we test for moderation by the sex of the participant for the correlations between the Dark Triad traits and emotional deficits.

Prior research has examined the manner by which the Dark Triad mediates interpersonal behavior. Instead, we examine how emotional deficits might be mediating factors accounting for sex differences in the Dark Triad. That is, the differences between the sexes on Dark Triad scores may emerge because men require less emotional connection than women do to achieve their goals. In particular, men may be more likely to behave in ways consistent with "darker" traits such as psychopathy, as too much of an emotional connection between prey and predator might interfere with more overt forms of exploitation (Jonason et al., 2013). Therefore, we examine the manner by which emotional deficits might facilitate (i.e., statistically mediate) the Dark Triad in the sexes.

Arguably, the capacity to identify or understand one's own emotions (i.e., alexithymia) may be linked to the capacity to identify or understand others' feelings (i.e., empathy); that is, the ability to "put oneself in someone else's shoes" may be underpinned by the ability to first have knowledge of one's *own* shoes (Hooker, Verosky, Germine, Knight, & D'Esposito, 2008). In addition, an externally-focused thinking style may reduce the capacity to recognize and attend to both one's own and others' emotional states, thus impacting on empathy. Moreover, cognitive and affective empathy—though dissociable constructs—are also strongly related (Shamay-Tsoory et al., 2009), with affective empathy potentially facilitating one's ability or motivation to understand others' feelings. However, the exact nature of this relationship between the different facets of alexithymia and empathy and their relationship to the Dark Triad is as yet unknown. We propose and test a model whereby Dark Triad scores are indirectly predicted by low empathy, through the mediating role of alexithymia; cognitive empathy deficits should be related to a diminished ability to describe and identify feelings, whereas affective empathy deficits should be related to an external orientation.

In this study we provide much needed nuance to the investigation of the specific emotional deficits associated with the Dark Triad. First, we examine a bidimensional model of empathy to examine the distinction between one's ability to understand one's feelings and one's ability to feel what others feel. Second, we provide the first examination of the relationship between the Dark Triad and different aspects of alexithymia. Third, we examine these relationships overall, and across the sexes, to determine if these deficits statistically mediate the sex differences in the Dark Triad traits.

2. Method

2.1. Participants and procedure

Three hundred and twenty volunteers (242 women) aged 17–56 years ($M = 24.24$, $SD = 7.33$) participated in an online study on the Dark Triad. Only those participants who completed the measures from unique IP addresses were included. Participants were informed of the nature of the study and were asked to give consent if they wished to participate; only those who gave consent have been included. They progressed through a series of self-report measures that assessed the variables of interest. At the end of the study, participants were debriefed and thanked.

2.2. Measures

To measure the Dark Triad traits, the Dark Triad Dirty Dozen (Jonason & Webster, 2010) was used. Participants were asked how much they agreed (1 = *not at all*; 5 = *very much*) with statements such as: "I tend to want others to admire me" (i.e., narcissism), "I tend to lack remorse" (i.e., psychopathy), and "I have used deceit or lied to get my way" (i.e., Machiavellianism). Items were averaged together to create an index of narcissism (Cronbach's $\alpha = .84$), Machiavellianism ($\alpha = .81$), psychopathy ($\alpha = .68$), and a composite Dark Triad index ($\alpha = .87$). Machiavellianism was correlated with psychopathy ($r(318) = .61$, $p < .01$) and narcis-

[1] We remain agnostic about the specific associations here given the limited research on alexithymia in nonclinical populations and in relation to normal personality variation.

Table 1
Descriptive statistics and sex differences for the Dark Triad and emotional deficiencies.

	Mean (*SD*)			*t*	*g*
	Overall	Men	Women		
Dark Triad					
Psychopathy	1.79 (0.69)	2.17 (0.78)	1.67 (0.62)	−5.14**	−0.67
Machiavellianism	1.96 (0.77)	2.24 (0.93)	1.86 (0.72)	−3.82**	−0.50
Narcissism	2.34 (0.86)	2.67 (0.86)	2.24 (0.84)	−3.92**	−0.52
Dark Triad composite	2.03 (0.64)	2.36 (0.68)	1.93 (0.68)	−5.30**	−0.70
Empathy					
Cognitive	4.10 (0.61)	3.93 (0.62)	4.16 (0.60)	2.80**	0.37
Affective	3.80 (0.73)	3.38 (0.77)	3.94 (0.66)	6.18**	0.81
Alexithymia					
Difficulty identifying feelings	2.26 (0.92)	2.24 (0.87)	2.26 (0.93)	0.19	0.03
Difficulty describing feelings	2.62 (0.91)	2.73 (0.96)	2.58 (0.89)	−1.26	−0.17
Externally oriented thinking	2.35 (0.56)	2.52 (0.56)	2.29 (0.55)	−3.14**	−0.44

g is Hedge's *g* for effect size.
* $p < .05$.
** $p < .01$.

sism ($r(318) = .62$, $p < .01$), and narcissism was correlated with psychopathy ($r(318) = .36$, $p < .01$).

The 20-item Toronto Alexithymia Scale (Bagby, Parker, & Taylor, 1994) was used to assess alexithymia, which comprises three subscales: difficulty identifying feelings (7 items; $\alpha = .87$), difficulty describing feelings (5 items; $\alpha = .77$), and externally oriented thinking (8 items; $\alpha = .57$). Participants were asked how much they agreed (1 = *strongly disagree*; 5 = *strongly agree*) with statements such as "I often don't know when I am angry" and "I am often confused about what emotion I am feeling". Difficulty identifying feelings was correlated with difficulty describing feelings ($r(320) = .67$, $p < .01$) and externally oriented thinking ($r(320) = .27$, $p < .01$), and externally oriented thinking was correlated with difficulty describing feelings ($r(320) = .40$, $p < .01$).

Cognitive and affective empathy were assessed with the 20-item Basic Empathy Scale (Jolliffe & Farrington, 2006). Participants were asked their agreement (1 = *strongly disagree*; 5 = *strongly agree*) with statements "I can usually figure out when people are happy" (i.e., cognitive empathy) and "Other people's feelings affect me easily" (i.e., affective empathy). Corresponding items were averaged to create indexes of cognitive empathy (9 items; $\alpha = .83$) and affective empathy (11 items; $\alpha = .83$); both dimensions were correlated ($r(320) = .41$, $p < .01$).

3. Results

We report descriptive statistics for the complete dataset, for men and women, and tests of sex differences (Table 1).[2] Women scored higher than men did for both cognitive and affective facets of empathy. Men scored higher on externally oriented thinking than women did, but the sexes did not significantly differ in their difficulty identifying or describing feelings. Men scored higher on all Dark Triad traits than women did.

We report zero-order correlations among the Dark Triad, empathy, and alexithymia (Table 2). All of the Dark Triad traits were associated with lower levels of cognitive empathy. Psychopathy and Machiavellianism were correlated with low levels of affective empathy; narcissism, however, was not. Psychopathy and Machiavellianism were correlated with higher levels of difficulty identifying feelings, difficulty describing feelings, and external-oriented thinking. Narcissism was also correlated with higher levels of difficulty identifying and describing feelings, but was not significantly related to externally oriented thinking.

In order to isolate the unique associations between the Dark Triad traits and emotional difficulties, we ran a series of multiple regressions in accordance with prior work (e.g., Jonason et al., 2013). Of the Dark Triad traits, only psychopathy predicted cognitive empathy, affective empathy, difficulty describing feelings, and externally oriented thinking. Externally oriented thinking was also uniquely predicted by Machiavellianism. Last, narcissism uniquely predicted difficulty identifying feelings. This suggests each of the traits comes with unique emotional deficiencies, but psychopathy facilitates the greatest number of emotional deficiencies.

Now we turn to an examination of the mechanisms through which these variables relate to one another. Cognitive empathy was correlated with difficulty describing feelings ($r(320) = -.32$, $p < .01$), difficulty identifying feelings ($r(320) = -.21$, $p < .01$), and externally oriented thinking ($r(320) = -.46$, $p < .01$). Affective empathy was not correlated with difficulty describing feelings ($r = -.06$) or difficulty identifying feelings ($r = .08$), but was correlated with externally oriented thinking ($r(320) = -.46$, $p < .01$). This appears to validate our hypothesis regarding differential correlates between alexithymia and empathy. We confirmed ($\chi^2(12) = 45.36$, $p < .01$, $\chi^2/df = 4.03$, CFI = .94, NFI = .95, RMSEA = .10, 90% CI [.07, .13]) this model in a Structural Equation Model that also include the Dark Triad traits (Fig. 1). In order to reduce multiplicative invalidity (Trafimow, 2003) we set p as .01 for path inclusion and, thus, we provide a model with only adequate fit.

Mediation was tested using both Sobel's test and ΔR^2. We examined mediation in the Dark Triad composite first (Fig. 2). The sex difference in the Dark Triad composite was partially mediated by externally oriented thinking (Sobel's $z = 2.12$, $p < .05$; $\Delta R^2 = .03$, $F(1, 312) = 8.30$, $p < .01$); partially mediated by cognitive empathy ($z = 2.15$, $p < .05$; $\Delta R^2 = .03$, $F(1, 312) = 11.13$, $p < .01$); and partially mediated by affective empathy ($z = 2.30$, $p < .05$; $\Delta R^2 = .05$, $F(1, 312) = 6.22$, $p < .05$).

In order to determine the extent to which each trait was involved in these mediation effects, we repeated the mediation analyses for each of the Dark Triad traits. The sex difference in psychopathy was partially mediated by externally oriented thinking ($z = 2.47$, $p < .05$; $\Delta R^2 = .04$, $F(1, 317) = 15.68$, $p < .01$) whereby the beta went from .31 ($t = 5.78$, $p < .01$; $R^2 = .09$) to .27 ($t = 5.14$, $p < .01$; $R^2 = .13$); partially mediated by cognitive empathy ($z = 2.17$, $p < .05$; $\Delta R^2 = .03$, $F(1, 317) = 11.83$, $p < .01$) whereby the beta went from .31 ($t = 5.78$, $p < .01$; $R^2 = .09$) to .28 ($t = 5.28$, $p < .01$; $R^2 = .12$); and partially mediated by affective empathy ($z = 4.26$, $p < .01$; $\Delta R^2 = .09$, $F(1, 317) = 34.67$, $p < .01$) whereby the

[2] We report Hedge's *g* for effect size because of the imbalanced sample size across the sexes.

Table 2
Zero-order correlations and standardized regression coefficients using the Dark Triad to predict emotional deficiencies.

	r (β)			
	Psychopathy	Machiavellianism	Narcissism	Dark Triad
Empathy				
Cognitive	−.23** (−.18*)	−.19** (−.05)	−.14* (−.05)	−.22**
Affective	−.38** (−.40**)	−.21** (−.10)	−.00 (.20**)	−.22**
Alexithymia				
Difficulty identifying feelings	.18** (.06)	.23** (.08)	.25** (.18**)	.26**
Difficulty describing feelings	.23** (.19**)	.18** (.05)	.11* (.01)	.20**
Externally oriented thinking	.26** (.19**)	.22** (.16*)	.06 (−.11)	.20**

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

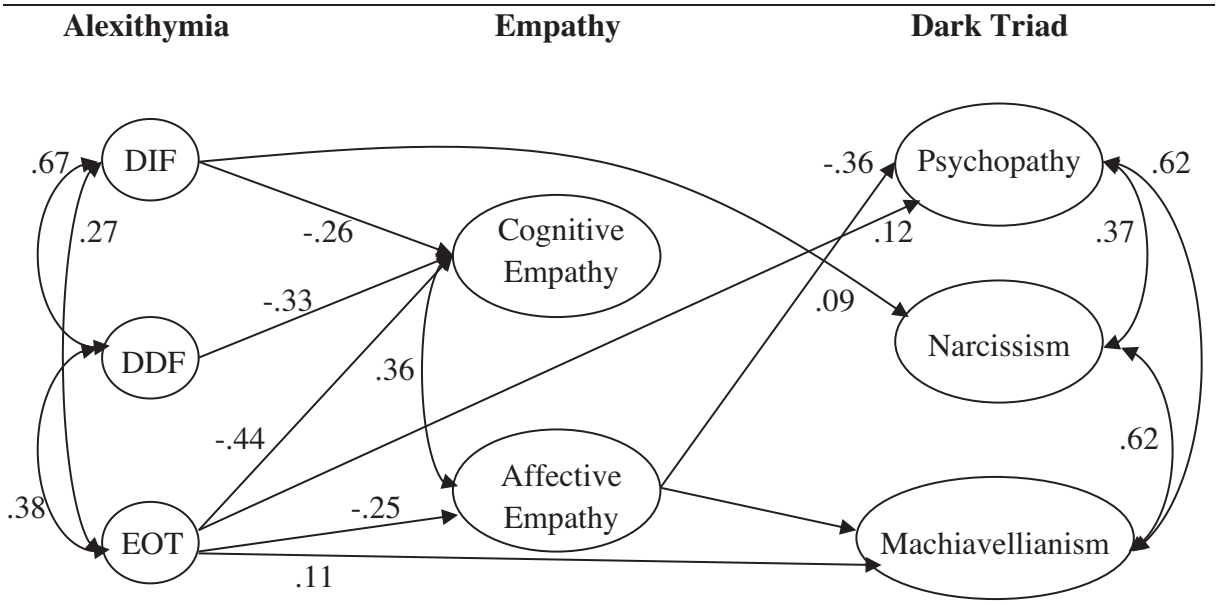
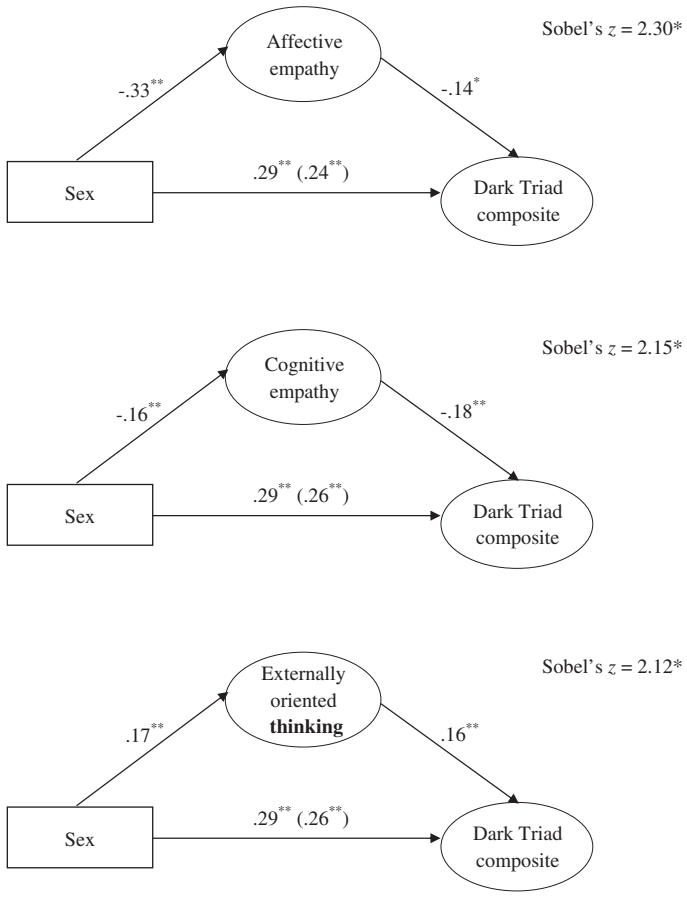


Fig. 1. Structural equation model representing the relationships between empathy, alexithymia, and the Dark Triad traits.

beta went from .31 ($t = 5.78$, $p < .01$; $R^2 = .09$) to .21 ($t = 3.82$, $p < .01$; $R^2 = .18$). The sex difference in Machiavellianism was partially mediated by externally oriented thinking ($z = 2.31$, $p < .05$; $\Delta R^2 = .14$, $F(1, 314) = 11.46$, $p < .01$) whereby the beta went from .21 ($t = 3.82$, $p < .01$; $R^2 = .04$) to .18 ($t = 3.23$, $p < .01$; $R^2 = .07$); partially mediated by cognitive empathy ($z = 2.01$, $p < .05$; $\Delta R^2 = .02$, $F(1, 314) = 8.39$, $p < .01$) whereby the beta went from .21 ($t = 3.82$, $p < .01$; $R^2 = .04$) to .19 ($t = 3.37$, $p < .01$; $R^2 = .06$); and partially mediated by affective empathy ($z = 2.52$, $p < .05$; $\Delta R^2 = .02$, $F(1, 314) = 7.69$, $p < .01$) whereby the beta went from .21 ($t = 3.82$, $p < .01$; $R^2 = .04$) to .16 ($t = 2.74$, $p < .01$; $R^2 = .06$). The sex difference in narcissism was partially mediated by cognitive empathy ($z = 1.64$, *ns*; $\Delta R^2 = .16$, $F(1, 315) = 4.11$, $p < .05$) whereby the beta went from .22 ($t = 3.72$, $p < .01$; $R^2 = .04$) to .20 ($t = 3.58$, $p < .01$; $R^2 = .05$).

We tested whether the sex of the participant moderated the relationships between the Dark Triad, alexithymia, and empathy. Moderation by sex was observed for Machiavellianism and certain facets of alexithymia and empathy. As with the Dark Triad composite, the relationship between higher levels of difficulty identifying feelings and Machiavellianism was more substantial (Fisher's $z = -3.51$, $p < .01$) for women ($r = .35$, $p < .01$) than men ($r = -.10$), and the relationship between higher levels of difficulty describing feelings and Machiavellianism was stronger ($z = -3.32$, $p < .01$) for women ($r = .29$, $p < .01$) than men ($r = -.14$). A similar moderation was observed for Machiavellianism and low levels of cognitive empathy ($z = 2.22$, $p < .05$), demonstrating that the correlation was more substantial for women ($r = -.24$, $p < .01$) than men ($r = .05$). Sex also moderated the relationship between difficulty describing feelings and psychopathy, with positive correlations



Note. * $p < .05$ ** $p < .01$; Sex: Female = 1; Male = 2.

Fig. 2. Mediation models where empathy and alexithymia mediate sex differences in the Dark Triad traits.

being stronger ($z = -2.35$, $p < .05$) for women ($r = .31$, $p < .01$) than men ($r = .01$).

4. Discussion

From different theoretical perspectives, researchers would predict that those high on the Dark Triad traits should have emotional deficits. Uniquely, however, evolutionary psychologists would not conclude this is because of co-morbidity or take it as evidence that the Dark Triad traits are necessarily pathologies that need to be treated. Instead, an evolutionary perspective suggests that individual differences represent coherent, coordinated systems that facilitate the pursuit of adaptive goals (Buss, 2009; Jonason et al., 2012). We contend the links between the Dark Triad traits and emotional deficiencies are indicative of this. That is, having low levels of empathy and a limited ability or motivation to communicate one's emotions to others facilitates the antagonistic social strategy embodied in the Dark Triad traits. Indeed, the external orientation they utilize may indicate that those high on the Dark Triad—psychopathy in particular—spend little time considering their "internal world" and instead are more focused on getting what they want from the "external world". In other words, too much time spent being concerned about the feelings of oneself or others may be an obstacle for someone pursuing the fast life strategy embodied by the Dark Triad (Jonason et al., 2012; McDonald, Donnellan, & Navarrete, 2011).

We present a complex pattern of moderation and mediation. The lower levels of empathy and increased externally oriented thinking facilitate the Dark Triad in women compared to men, and there is a particularly strong relationship between psychopathy and these emotional deficits. High levels of psychopathy in women may be predicted by elevated levels of emotional deficits and a more nefarious part of the Dark Triad personality cluster, as this was specifically linked to the more socially aversive constructs of limited overall empathy and externally oriented thinking. Narcissism turned out to be the least aversive (Rauthmann, 2012), and could even potentially suppress the effect of the darker traits in women. Therefore, there may be specific constellations of Dark Triad traits that form personality types that could be considered more or less socially aversive—or adaptive—dependent on the goals and resultant behaviors involved. Theoretically, this could be linked to the differing evolutionary pressures presented to, and thus divergent adaptive strategies developed by, each sex. Historically, men's needs were met through a "hunter" approach, whereby they directly attained material goods, and sociality was useful but not essential, whereas women's needs may have been more effectively met through social belongingness, serving to protect and provide for both herself and her offspring (Smuts, 1992). The profound lack of empathy associated with psychopathy could be adaptive for achievement of overtly exploitative "male" goals, with relatively higher levels of empathy and narcissism better suited to meet socially exploitative "female" goals, consistent with past research (Jonason & Schmitt, 2012). Therefore, differential evolutionary pressures may account for divergent paths to the

exploitative nature of Dark Triad traits and, equally, different routes to emotional deficits (Jonason et al., 2013).

Possible study limitations relate to the measures and methods used. First, the measures of psychopathy and external orientation had internal consistencies (α) below the traditional standards of .70 (Nunnally, 1978). However, other work has argued for a more liberal standard of .50 (Schmitt, 1996) to which both of these scales conform. What this means is that we have conservative estimates of the true scores as noted previously in relation to the Dirty Dozen (Jonason & Luévano, 2013; but see Miller et al., 2012). We prefer a more conservative approach; an approach that cost us little in that we still found predicted associations with our measures. Nevertheless, one could correct for measurement attenuation and find larger but still significant correlations.

Second, whilst we used a multidimensional measure of empathy, there are also theoretical complications with the conceptualization of this construct. Whereas the Basic Empathy Scale measured affective empathy as affect congruence, it is also thought to refer to the generation of an appropriate emotional reaction in response to others' emotions (Feshbach, 1987). Future research could explore the relevance of different conceptualizations of empathy and related constructs such as emotional intelligence (Joseph & Newman, 2010), along with examining these relationships in alternate populations and larger samples with longer measures.

Third, there was a gross imbalance in the number of men to women. We attempted to address this by using Hedge's *g* for effect size and examined whether *t*-values were grossly affected by inequality of variance across the sexes. Despite the imbalance, the results appear to be generally robust to such concerns.

Applying an evolutionary paradigm to the Dark Triad traits has considerable appeal (Jonason et al., 2012); reframing apparently aversive traits more broadly as part of an alternative life history strategy rather than a pathology requiring treatment (Buss, 2009). Such an approach has proven useful here in understanding the relationship between the Dark Triad and certain emotional deficits, and suggests these deficits might be conducive for pursuing the fast life history strategy embodied by the Dark Triad (Jonason et al., 2013). Consequently, low empathy and high alexithymia may be advantageous for those who are evolutionarily-compelled to live life "in the moment", with sexually dimorphic adaptive mechanisms consistent with disparate evolutionary goals underlying the Dark Triad traits and resultant behavior in men and women.

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