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The relationship between the Dark Tetrad and a two-dimensional view of empathy

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ABSTRACT

Although a disturbance in empathy has been related to all personality traits comprising the Dark Tetrad (i.e. Machiavellianism, narcissism, psychopathy, sadism), the relationship between different aspects of empathy and these dark traits measured jointly has not been empirically scrutinised. Therefore, the aim of the present study was to examine the associations between the Dark Tetrad, the two-dimensional (cognitive vs affective) model of empathy, and the ability to recognize emotions. Participants (N = 576; 250 males) for this online study were recruited using the snowball sampling method via social networking sites. Results revealed that all personality traits were inversely related to both affective and cognitive empathy, except for a positive correlation between narcissism and cognitive empathy. The regression analyses showed that the unique aspects of the Dark Triad negatively predicted affective empathy, whereas only Machiavellianism (negatively) and narcissism (positively) predicted cognitive empathy. Although both psychopathy and sadism were inversely correlated with the performance in the emotion recognition task, only sadism remained as a significant negative predictor once the shared variance was accounted for. The findings established different empathic profiles of each dark trait, thus supporting the construct of the Dark Tetrad as a set of overlapping, yet distinctive traits.

1. Introduction

A pivotal study by Paulhus and Williams (2002) has brought considerable attention to the Dark Triad: a subclinical constellation of socially aversive personality traits consisting of Machiavellianism, psychopathy, and narcissism. Since the publication there has been an abundance of research showing that these personalities represent similar and overlapping, but still distinct constructs with unique features (Furnham, Richards, & Paulhus, 2013). This set of malevolent traits was subsequently expanded into the Dark Tetrad by including a subclinical sadism (Chabrol, Van Leeuwen, Rodgers, & Séjourné, 2009), which has proven to be a distinct construct closely linked to the Dark Triad (Međedović & Petrović, 2015; Plouffe, Saklofske, & Smith, 2017).

Psychopathy is characterized by affective deficits, manipulative interpersonal style, overt antisocial behaviour, and impulsivity (Hare & Neumann, 2008), which differs from other dark members in terms of impulsive antisocial behaviour (Jones & Figueredo, 2013). Machiavellianism includes cynical worldview, manipulativeness, amorality, callousness, and strategic-calculating behaviour, with the latter being its unique quality (Jones & Paulhus, 2014). Narcissism features grandiosity, sense of entitlement, and exploitative interpersonal style, and is distinguished from the other dark personalities by a self-promoting behaviour driven by a need for ego-reinforcement (Jones & Paulhus, 2014). Finally, sadism applies to a person characterized by a cruel and vicious behaviour, who deliberately humiliates and hurts others in order to assert dominance or just for the pure pleasure of it (O'Meara, Davies, & Hammond, 2011).

A lack of empathy has been suggested as one of the essential features all four dark personalities have in common (Paulhus, 2014). Indeed, research confirmed the link between low empathy and the core of the Dark Tetrad, as it accounted for about two thirds of the variance in the Tetrad variables (Book et al., 2016). However, empathy represents a complex construct which involves both understanding and sharing of another's emotional state, and can be therefore divided into two types. Affective empathy refers to an observer's concordant emotional response to the affective state of another, whereas cognitive empathy involves understanding the feelings of others (including by means of perspective-taking) and inferring their mental state (Baron-Cohen & Wheelwright, 2004; Cohen & Strayer, 1996). Despite the importance of disturbed empathy as one of the core features of the Dark Tetrad, no

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study thus far has explored the associations between these traits measured together and the two types of empathy. There is an abundance of research concerning the empathic abilities of individuals who manifest traits within the Dark Triad domains, studied either individually or in concert, but the associations between the cognitive and affective components of empathy and the Dark Tetrad remain under-researched. Moreover, the studies regarding the Dark Triad and empathy have yielded partially conflicting results: it is unclear whether empathic disturbances refer only to the affective or to the cognitive component as well, and whether narcissism is associated with enhanced or diminished empathy (Giammarco & Vernon, 2014; Jonason & Krause, 2013; Jonason & Kroll, 2015; Wai & Tiliopoulos, 2012). Therefore, we sought to address the aforementioned gaps within the literature by exploring the affective and cognitive empathy of the Dark Tetrad.

1.1. Psychopathy and empathy

A lack of empathy represents an important part of the theoretical description of psychopathy and this link has been confirmed in a number of studies (Ali & Chamorro-Premuzic, 2010; Flight & Forth, 2007). However, studies which made a distinction between different types of empathy have yielded inconsistent results, namely regarding cognitive empathy. It seems that the relationship between cognitive empathy and psychopathy remains inconclusive, as studies have presented evidence of both intact and impaired cognitive empathy in psychopathic individuals (Brook & Kosson, 2013; Oliver, Neufeld, Dziobek, & Mitchell, 2016). Empirical findings regarding the ability of psychopathic individuals to accurately recognize emotions are also inconsistent, with some indicating general or selective impairments (Ali & Chamorro-Premuzic, 2010; Hastings, Tangney, & Stuewig, 2008), whereas others have concluded that psychopathy is not associated with such deficits (Glass & Newman, 2006; Richell et al., 2003).

1.2. Narcissism and empathy

As in psychopathy, a lack of empathy has also been traditionally considered as a hallmark of narcissism, although it was largely based on a consensus between clinicians and patient observations (Ritter et al., 2011). While there are findings suggesting that narcissism is indeed related to impairments in general or affective empathy (Hepper, Hart, & Sedikides, 2014; Ritter et al., 2011; Vonk, Zeigler-Hill, Mayhew, & Mercer, 2013), studies which applied more rigorous methodological designs found little support for the inverse association between narcissism and affective empathy (Lishner, Hong, Jiang, Vitacco, & Neumann, 2015). Moreover, recent studies implied that narcissists, while lacking motivation for the cognitive empathy, are in fact capable of empathic responding under certain conditions (Hepper et al., 2014; Ritter et al., 2011). Narcissistic individuals usually show unimpaired ability in emotion recognition tasks (Ritter et al., 2011; Wai & Tiliopoulos, 2012; although see Marissen, Deen, & Franken, 2012).

1.3. Machiavellianism and empathy

Studies have showed that Machiavellianism is negatively associated with empathy assessed via self-report and physiological measures (Ali & Chamorro-Premuzic, 2010; Massey-Abernathy & Byrd-Craven, 2016). Findings on emotion identification performance and Machiavellianism are somewhat mixed, with some studies showing lack of the association and others reporting negative correlations (Ali & Chamorro-Premuzic, 2010; Lyons, Caldwell, & Shultz, 2010; Wai & Tiliopoulos, 2012). Another study showed that Machiavellianism, although demonstrating negative correlation, positively predicted performance in an emotion recognition task once the overlap among other personality features was accounted for (Vonk, Zeigler-Hill, Ewinga, Mercer, & Noser, 2015).

1.4. Sadism and empathy

Due to the paucity of research on subclinical (everyday) sadism, little is known regarding its empathic features. Although it has been hypothesized that sadists lack empathy, some authors have argued that a sadist may at least possess an unimpaired cognitive empathy to be able to successfully hurt another (Baumeister, 1997; O'Meara et al., 2011). Although Buckels, Jones, and Paulhus (2013) found inverse correlations between sadism, and perspective-taking and empathic concern, another study indicated that sadists did not differ from those low on sadism in the ability to understand the emotions of others (O'Meara et al., 2011). A recent study reported negative correlations between sadism, and affective empathy and social skills, whereas the link with cognitive empathy was nonsignificant (Sest & March, 2017).

1.5. Dark Triad and empathy

There are many empirical findings regarding empathic features of the dark traits studied individually, but these should be interpreted with caution as they may reflect the uncontrolled overlap with another dark trait. Despite this, only recently researchers have begun to investigate the relationship between empathy and the Dark Triad traits measured jointly.

The first study examining this issue showed that although all Dark Triad traits showed lower affective empathy and unaffected cognitive empathy, with narcissism even showing a positive link with the latter, only primary psychopathy emerged as a negative predictor of affective empathy and narcissism as a positive predictor of cognitive empathy (Wai & Tiliopoulos, 2012). Individuals with primary psychopathic traits and Machiavellianism demonstrated poorer performance on an emotion identification task, whereas narcissistic individuals were better at identifying angry facial expressions. However, a subsequent study showed that the Dark Triad traits negatively correlated with both affective and cognitive empathy, except for the lack of association between narcissism and affective empathy. Finally, only psychopathy predicted both types of empathy and narcissism emerged as a positive predictor of affective empathy (Jonason & Krause, 2013).

Another study confirmed that all Dark Triad traits were negatively associated with empathy, but did not make a distinction between the types of empathy (Jonason, Lyons, Bethell, & Ross, 2013). Studies employing the multidimensional model of empathy assessed with the Interpersonal Reactivity Index (IRI; Davis, 1983), also reported mixed results (Giammarco & Vernon, 2014; Jonason & Kroll, 2015).

A recent study explored the associations between the Dark Triad and Theory of Mind (ToM), a concept closely related to cognitive empathy (Vonk et al., 2015). The results demonstrated both psychopathy and Machiavellianism had negative correlations with ToM, although only psychopathy showed most consistent unique associations with ToM deficits, whereas grandiose narcissism was related to ToM skills in two out of five tasks.

In sum, the Dark Triad traits are negatively associated with certain aspects of empathy, but the question remains as to whether these associations are limited to the affective empathy, or apply to cognitive empathy as well. Additionally, the relationship between narcissism and empathy is particularly unclear, with studies reporting mixed results, including positive associations.

1.6. The present study

The current study was set out to clarify the aforementioned inconsistencies in the literature, and to address the research gap regarding associations between two-dimensional empathy and the Dark Tetrad. Some of the discrepancy in findings might stem from differences in employed methodology, such as sample variations (e.g. adult male offender sample vs dominantly female student sample), different conceptualizations and measurements of both empathy (e.g. definition of

Table 1
Descriptive statistics, internal consistency coefficients, and Pearson's correlation coefficients between the Dark Tetrad, empathy, emotion recognition, gender and age.

Scale	M	SD	α[a]	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Gender				−0.09*	0.17**	0.32**	0.21**	0.34**	0.04	−0.04	−0.15**	−0.22**
2. Age	32.91	10.94			−0.05	0.13**	−0.05	0.07	−0.18**	−0.21**	−0.16**	−0.26**
3. Emotion recognition	26.39	3.57	0.51			0.12**	0.15**	0.16**	0.03	−0.01	−0.14**	−0.12**
4. Affective empathy	39.97	6.79	0.79				0.28**	0.89**	−0.20**	−0.27**	−0.17**	−0.34**
5. Cognitive empathy	38.04	4.23	0.78					0.69**	0.17**	−0.16**	−0.13**	−0.14**
6. Total empathy	78.01	8.96	0.82						−0.07	−0.28**	−0.19**	−0.32**
7. Narcissism	14.50	6.49	0.82							0.20**	0.15**	0.32**
8. Machiavellianism	55.48	10.08	0.79								0.37**	0.61**
9. Sadism	14.37	4.98	0.84									0.61**
10. Psychopathy	52.53	13.86	0.88									

Males = 0; females = 1.
[a] Based on standardised items.
* $p < 0.05$; two-tailed.
** $p < 0.01$; two-tailed.

empathy; total empathy vs distinct dimensions of empathy; self-report vs stimulus-associated measures) and the Dark Tetrad (e.g. unidimensional vs multidimensional measures; variations in psychopathy measures; total psychopathy vs psychopathy factors/facets scores). One of the widely used empathy measures, the IRI, has been a subject of criticism for confounding sympathy with empathy and not providing an appropriate measure of cognitive empathy (Jolliffe & Farrington, 2006). Furthermore, self-report measures of empathy in general have been criticized for assuming that individuals are able to accurately self-assess and report on such a delicate process (Brook & Kosson, 2013). Therefore, in order to achieve the aforementioned aims of the study we sought a relatively large sample of both men and women, and employed a self-report measure of cognitive and affective empathy, and a performance-based measure of emotion recognition.

We hypothesized that all dark traits would be associated with deficits in affective empathy, whereas cognitive empathy would remain unaffected, with the exception of positive link between narcissism and cognitive empathy, but not performance-based measure of emotion recognition.

2. Methods

2.1. Participants

The sample consisted of 576 Serbian-speaking volunteers (326 women, 250 men), aged between 18 and 68 years (M = 32.91, SD = 10.94) and mostly well-educated (primary school 0.5%, secondary school 30.9%, higher school 9.7%, higher education 58.7%). The participants for this online study were recruited using the snowball sampling through Facebook and Twitter. The data was collected anonymously and participants had been presented with an informed consent sheet before they started the survey.

2.2. Materials

Psychopathy was assessed using the 29-item Self-Report Psychopathy Scale - Short Form (SRP-SF; Paulhus, Neumann, & Hare, 2016) designed to measure psychopathic traits in community samples (α = 0.88).

Machiavellianism was assessed using the MACH-IV (Christie & Geis, 1970), a 20-item scale that taps into Machiavellian tendencies (α = 0.79).

The Short Sadistic Impulse Scale (O'Meara et al., 2011), a 10-item unidimensional measure of sadistic personality traits, was employed to assess sadism (α = 0.84).

Empathy was assessed using the Basic Empathy Scale (BES; Jolliffe & Farrington, 2006), a 20-item measure of total, cognitive, and affective empathy ($\alpha_{\text{total empathy}} = 0.82$; $\alpha_{\text{cognitive empathy}} = 0.78$; $\alpha_{\text{affective empathy}} = 0.79$).

All of the above mentioned measures recorded responses using a five-point Likert-type scale.

The 40-item Narcissistic Personality Inventory (Raskin & Hall, 1979) was used to assess subclinical narcissism. Each item consists of two statements, one of which reflects narcissism, and participants were instructed to choose the one which they thought applied to them better (α = 0.82).

The Reading the Mind in the Eyes test (RMET; Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001) was utilized as a performance-based measure of complex facial emotion recognition (Oakley, Brewer, Bird, & Catmur, 2016). Participants were presented with 36 photographs of the eye region and their objective was to choose the correct answer out of four presented words that best described the mental state or emotion of the person in the photograph (α = 0.51).

All the measures have been previously translated into Serbian and used by other authors, except for the BES and the SRP-SF which were translated and back-translated for this study in accordance with the authors of the tests.

3. Results

Descriptive statistics, alpha coefficients, and Pearson's correlation coefficients are presented in Table 1. All dark traits showed significant negative correlations with both affective and cognitive empathy, with the exception of a positive correlation between narcissism and cognitive empathy. Only sadism and psychopathy demonstrated inverse correlations with emotion recognition.

Next, a hierarchical multiple linear regression was utilized to control for the shared variance between the dark traits and explore their unique associations with empathy and emotion recognition variables (Table 2). After the correlation coefficients were examined to identify variables that ought to be retained as controls in the regression models, gender was entered in Step 1 of all regression models, whereas age was retained as control only in the model predicting affective empathy. Each of the Dark Triad traits significantly negatively predicted affective empathy, whereas narcissism emerged as a positive and Machiavellianism as a negative predictor of the cognitive empathy. Finally, only sadism emerged as a significant negative predictor of the accuracy in emotion recognition.

4. Discussion

The current study was the first to address the research gap regarding the associations between the Dark Tetrad traits measured in concert, and cognitive and affective empathy. The most profound finding was that the dark traits were negatively associated with both affective and, to a lesser extent, cognitive empathy, with the exception of a positive

Table 2
Hierarchical multiple linear regressions on facial affect recognition task and empathy variables.

Predictors	Emotion recognition		Total empathy		Affective empathy		Cognitive empathy	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1		0.03**		0.12**		0.13**		0.04**
Gender	0.17**		0.34**		0.34**		0.21**	
Age					0.16**			
Step 2		0.02*		0.09**		0.09**		0.07**
Gender	0.13**		0.31**		0.30**		0.18**	
Age					0.07			
Narcissism	0.05		0.00		− 0.12**		0.21**	
Machiavellianism	0.08		− 0.18**		− 0.14**		− 0.14**	
Sadism	− 0.10*		0.02		0.07		− 0.06	
Psychopathy	− 0.09		− 0.17**		− 0.17**		− 0.05	

Males = 0; females = 1.
* $p < 0.05$; two-tailed.
** $p < 0.01$; two-tailed.

relationship between cognitive empathy and narcissism. However, only sadistic and psychopathic traits were associated with diminished ability to accurately recognize emotional states in others.

As hypothesized, all dark personality traits showed negative correlations with the affective empathy. However, when the shared variance among the traits was accounted for, sadism ceased to show significant link, whereas uncontaminated aspects of each of the Dark Triad traits remained significant predictors of low affective empathy. The emotional detachment of dark personalities may be considered as advantageous in pursuing exploitative and ruthless social interactions, as the lack of affective empathy may enable a person to selfishly manipulate and mistreat others without experiencing negative emotions. Although narcissism has been considered sometimes as less malevolent or “lighter” in comparison to other dark traits (Jonason et al., 2013; Jonason & Kroll, 2015), our findings failed to support this notion as they suggest that narcissistic traits, like psychopathy and Machiavellianism, are linked with lower capacity to experience others' emotional states.

Except for the positive relationship between cognitive empathy and narcissism, the results did not support our hypotheses regarding the relations between cognitive empathy and other dark traits. Unlike the results reported by Wai and Tiliopoulos (2012), our findings indicate that individuals with higher psychopathic, sadistic and Machiavellian traits actually reported lower understanding of another's emotions. Although one could assume that dark personalities should possess adequate cognitive empathy to successfully pursue manipulative interpersonal style, empirical data indicate we should be cautious in drawing such conclusions. When unique associations between the Dark Tetrad and cognitive empathy were isolated, the only negative predictor of cognitive empathy that emerged was for Machiavellianism, and, in line with previous research (e.g. Wai & Tiliopoulos, 2012), narcissism emerged as a positive predictor of cognitive empathy.

However, in order to adequately understand the association between cognitive empathy and the Dark Tetrad, the results regarding the performance-based measure of ability to infer emotional states in others (RMET) should be incorporated in the interpretation, as self-report measures of empathy have been criticized as vulnerable to biased responding (Domes, Hollerbach, Vohs, Mokros, & Habermeyer, 2013). Although both sadism and psychopathy were related to lower accuracy in the emotion recognition task, only sadism emerged as a significant predictor of low performance on this task. Given these results, there is a possibility that the deficits in ToM uniquely associated with psychopathy reported by Vonk et al. (2015) were actually confounded by sadistic traits. It is also important to note that narcissism and Machiavellianism were not related to the ability to infer emotions in others. Our results are inconsistent with the results of Vonk et al. (2015) who reported positive associations between unique Machiavellian traits and the RMET. However, they reported a negative correlation between Machiavellianism and the RMET, and when examining unique associations in the regression model, borderline personality features and narcissistic vulnerability were also included as predictors, which affected the overall outcome. Furthermore, all five ToM tests employed in their study showed significant negative correlations with Machiavellianism.

Although narcissism showed higher self-reported cognitive empathy, this was not confirmed by the performance on the emotion recognition task which showed nonsignificant relationship. This pattern of results suggests that narcissism was associated with inflated confidence in one's ability to infer emotions in others, but the superior performance in the actual task was not found. Indeed, it has been suggested that narcissistic individuals may overrate their empathic abilities due to their sense of grandiosity and superiority (Marissen et al., 2012; Wai & Tiliopoulos, 2012), and therefore the conflicting results regarding narcissism may be a consequence of a self-report bias. Nonetheless, as narcissism emerged as a negative predictor of affective empathy and was not linked to disturbance of emotion recognition, one could argue that narcissism is associated with an empathic profile that enables understanding of how other people feel without experiencing emotional contagion, which may be beneficial in leading an exploitative and manipulative interpersonal style.

A lack of empathy has been considered as one of the features of sadism, but our findings point to more complex relations – although associated with misreading emotional expressions, unique sadistic features were not related to the ability to understand and share affective states of others. In order to effectively hurt others and derive pleasure from it, a sadist should be able to infer the vulnerabilities and feelings of a victim, or as Gilbert (p. 139, Gilbert, 1997) stated “A torturer may put a gun to your head; the empathic torturer puts it to your child's head”. Therefore, it may be possible that unaffected empathy enables individuals with high sadistic traits to know how to successfully inflict pain to another person, while lacking the sympathy and empathic concern for the victim.

The pattern of results regarding sadism, affective empathy, and emotion recognition may be alternatively interpreted in the light of mentalizing abilities (Allen & Fonagy, 2006). As suggested in the recent study by Schimmenti et al. (2017), the Dark Triad traits may be associated with distorted mentalizing one's own emotional experiences, rather than affective states of others. In line with this explanation, our results regarding sadism would suggest an opposite pattern of distorted mentalizing, with disturbances in recognizing the emotional states of others, but not one's own emotions. In fact, it seems that sadistic traits are indeed linked with difficulties in regulating one's emotions, such as nonacceptance of negative emotions, difficulties engaging in goal-directed behaviour when distressed and controlling impulsive behaviour

when upset (Velotti & Garofalo, 2015).

Overall, it is also important to note the strength of the results: the Dark Tetrad traits explained only 9%, 7% and 2% of the variation in affective empathy, cognitive empathy, and emotion recognition, respectively, and the absolute values of beta coefficients ranged from 0.10 to 0.21. As a disturbance in empathy is considered an important feature of the Dark Tetrad, stronger associations would be expected.

Finally, the pattern of results regarding total empathy revealed negative correlations with all dark traits except narcissism, and was negatively predicted only by Machiavellianism and psychopathy, thus further stressing their distinctiveness. However, this provides an example of how misleading total empathy scores can be, as we are left with the impression that narcissism was not associated with empathy. However, narcissism showed negative association with affective empathy and positive association with cognitive empathy, which cancelled each other out in the total empathy scores.

Although the present study delivered important insights into empathic (dis)abilities of the Dark Tetrad, its limitations should be acknowledged. Firstly, the internal consistency of the RMET was much lower than the usual standard of 0.70, although still within the more liberal standards (Schmitt, 1996), and therefore the caution is warranted when interpreting its results. Secondly, we used a measure of emotion recognition based only on the photographs which inherently has a limited ecological validity as it cannot capture nuances of real-life social interactions. Lastly, given the utilized online snowball sampling method, its limitations should be acknowledged when generalizing the results. Bearing in mind these limitations, it would be beneficial if these results could be replicated in future studies employing more rigorous sampling method, as well as other ecologically valid and stimulus-associated measures of empathy. Finally, as gender may be a significant moderating variable, we believe the future studies could make a meaningful and much needed contribution to the literature by running separate analyses for males and females, instead of statistically controlling for the gender effect.

The current findings support the theoretical notion regarding the empathic disturbances associated with Dark Tetrad and further illustrate that these disturbances are related to both cognitive and affective empathy (with the exception of positive association between cognitive empathy and narcissism). When unique features of each of the Dark Tetrad traits were further scrutinised, different empathic profiles emerged, thus confirming the view of the Dark Tetrad as a set of similar, yet distinctive personality traits.

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