



The affective and cognitive empathic nature of the dark triad of personality

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ABSTRACT

The dark triad represents the most prominent, socially aversive personalities (viz., Psychopathy, Narcissism, and Machiavellianism) characterised by a common underlying deficit in empathy. Although, evidence shows that empathy can be further divided into cognitive and affective systems, this two-dimensional conceptualisation had not been considered when examining the empathic impairments of the complete dark triad. The present study aimed to determine whether the dark triad is associated with deficits in cognitive or affective empathy as measured through self-reports and facial expressions tasks. The sample comprised 139 university students. All dark triad personalities were associated with deficits in affective empathy, but showed little evidence of impairment in cognitive empathy. The facial expression tasks provided further support for the affective nature of the dark triad's empathic deficits. Finally, the results emphasised the importance of primary psychopathy, as the main predictor of empathic deficits within the dark triad.

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1. Introduction

Socially aversive personalities are associated with empathic deficits. Recent research has increasingly focused on the *dark triad* of personality, comprising *Machiavellianism*, *narcissism*, and *psychopathy* (originally proposed by Paulhus and Williams (2002)), and its association with empathic impairments. Although the individual empathic nature of these personalities has been independently and extensively studied, research on their combined empathic attributes has been absent. The aim of this enquiry was to address this gap in the literature.

1.1. Empathy

Empathy is a social awareness, through which a person shares an emotional experience with others either or both on an affective and cognitive level (Davis, 1994). *Affective empathy* refers to the generation of an appropriate emotional reaction in response to others' emotions (Feshbach, 1978, 1987). It is comparable to the construct of *emotional contagion* – the tendency to “catch” emotions from observed emotional states of others. Affective empathy is important in priming altruistic behaviours (Eisenberg & Miller, 1987; Penner, Dovidio, Piliavin, & Schroeder, 2005). *Cognitive*

empathy is the ability to discern emotional states of others without undergoing emotional contagion. In its functional utility it can be a valuable tool for insight in such settings as counselling or law enforcement. Since, however, it provides an individual with sensitive emotional information, it may also underlie manipulative personalities (McIllwain, 2003). Differential relationships of the two empathic systems have been identified in individuals with Asperger syndrome (impairment in cognitive empathy; Dziobek et al., 2008) or higher aggression (impairment in affective empathy; Schechtman, 2002). However, to date no evidence exists about the relationship of these systems with the dark triad of personality.

1.2. Dark triad

1.2.1. Machiavellianism

Machiavellianism is a personality trait characterised by duplicity, externalisation of blame, emotional coldness, and use of interpersonal strategies for manipulating others for personal gain (Christie & Geis, 1970; Fehr, Samsom, & Paulhus, 1992). High Machiavellians can identify and exploit weaknesses in others, whilst hiding their own. They remain unmoved by emotional involvement with others and are indifferent towards their own beliefs or behaviours. They possess a cynical world-view and believe it is better to manipulate than be manipulated. This exploitative tendency may derive from a lack of emotional attachment during social interactions (Harrell, 1980). High Machiavellians are consistently found to possess low empathy (e.g. Ali & Chamorro-Premuzic, 2010; Barlow, Qualter, & Stylianou, 2010).

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1.2.2. Narcissism

Narcissists possess exaggerated views of self-worth and grandiosity; they are self-centred, arrogant, and exploitative in interpersonal relationships, viewing others as a means through which their needs for admiration and reinforcement of self-views can be attained (Campbell, Reeder, Sedikides, & Elliot, 2000; Campbell, Rudich, & Sedikides, 2002; Rhodewalt & Peterson, 2009). Like Machiavellianism, narcissism is associated with reduced empathy (Watson, Grisham, Trotter, & Biderman, 1984; Watson & Morris, 1991).

1.2.3. Psychopathy

Psychopathic individuals employ destructive patterns of dysfunctional interpersonal behaviours, augmented by aberrant cognitions, and utilise charm and manipulative techniques for personal gain, regardless of cost to others, while contrary to the other dark triad traits, they are characterised by high impulsivity and a disposition towards reckless, inappropriate, immoral, or even violent conduct (Hare, 1999). A fundamental trait of subclinical psychopathy, as in Machiavellians and narcissists, is empathic deficiency (Del Gaizo & Falkenbach, 2008; Mahmut, Homewood, & Stevenson, 2008). Their inability to empathise is further complemented by lack of remorse, guilt, and regret (Williams & Paulhus, 2004).

Psychopathy is divided into *primary* and *secondary* (Del Gaizo & Falkenbach, 2008). Primary psychopaths maintain their “cool” and carefully execute planned behaviours, fuelled by relative lack of morality. Secondary psychopathy is an emotionally conditioned adaptation to environmental factors that leads to an impulsive and emotionally unstable character, which may cause harm to others in response to negative emotion.

1.3. Dark triad and empathy

Although research has demonstrated robust negative relationships between the dark personalities and empathy, findings are inherently limited for at least the following reasons. First, the empathy assessments utilised so far tapped into either cognitive or affective empathy (e.g. *Emotional Empathy Scale*; Mehrabian & Epstein, 1972), did not differentiate between the two (e.g. *Empathy Scale*; Hogan, 1969), or possessed questionable levels of content validity (e.g. *Interpersonal Reactivity Index*; Davis, 1983). Consequently, the identified empathic deficits associated with the dark triad cannot be reliably disseminated as either being cognitive or affective. This information is crucially needed, given the distinct behavioural and motivational attributes of the two empathy systems. Thus, a research-focus on the relationship between the dark triad and both cognitive and affective empathy is vital in advancing the understanding of how individual differences in such personality expressions impact upon social interactions.

Second, no study, thus far, has assessed the combined empathic nature of the three dark triad traits. Since these personalities are significantly related to each other, by co-assessing their behaviour, it would be possible to examine their concurrent, unique, and interactive effects.

1.4. The current study

This is the first reported study to examine bi-dimensional empathic deficits on all the facets of the dark triad. Since exploitation and manipulation are the dark triad’s key characteristics, empathic deficits may be more affective than cognitive. Hence, we hypothesised that the dark triad personalities are associated with lower global and affective empathy, but would demonstrate no deficits in cognitive empathy. Consequently, we expected individuals high on the dark triad to demonstrate higher levels of inappropriate empathic responding to emotional stimuli (i.e. low affective empathy)

and show no impairment in accurately identifying others’ emotions (cognitive empathy). Finally, in an explorative approach, gender effects were considered.

2. Method

2.1. Measures

2.1.1. Mach-IV (Christie & Geis, 1970)

A widely used measurement of Machiavellianism comprises 20 items that assess on a 5-point Likert scale the use of manipulative interpersonal strategies for personal gain, a lack of concern with conventional morality, and a generally cynical attitude towards human nature. Higher scores reflect higher Machiavellian tendencies.

2.1.2. Narcissistic personality inventory (NPI; Raskin & Hall, 1979)

A 40-item, two alternative forced-choice assessment of narcissistic personalities in non-clinical populations. Two statements are presented, one of which is characteristic of a narcissistic mindset. A point is given for each narcissistic statement chosen, thus higher scores reflect higher narcissistic tendencies.

2.1.3. Levenson self-report psychopathy scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995)

A 26-item measurement designed to assess attributes and behaviours commonly associated with psychopathy within non-clinical populations (4-point unbalanced, no neutral point, Likert-type scale). Sixteen items measure primary psychopathy and the remaining items assess secondary psychopathy. Higher scores reflect higher psychopathic tendencies.

2.1.4. Empathy quotient (EQ; Baron-Cohen & Wheelwright, 2004)

An instrument designed to assess cognitive and affective empathy – 11 items per empathy construct; 4-point unbalanced, no neutral point, Likert-type scale; higher scores reflect higher empathic tendencies.

2.1.5. Self-assessment manikin (SAM; Bradley & Lang, 1994)

Since affective empathy is defined as an appropriate emotional response to the perceived emotions of others, it may be more accurately and correctly measured by assessing an individual’s response to emotional stimuli, as opposed through self-report questionnaires. Research shows that the presentation of simple facial expressions, depicting various emotions, can induce emotional contagion (Hess & Blairy, 2001; Wild, Erb, & Bartels, 2001). Since an individual’s emotional response must be appropriate to the situation to be counted as affective empathy, how positively or negatively one feels toward another’s emotions is arguably an empathic criterion.

We used SAM as an affective empathy facial responding task, by replicating the procedure from a study by Ali, Amorim, and Chamorro-Premuzic (2009), extending the task by adding angry and fearful expressions, as both are considered basic universal emotions (Ekman & Friesen, 1971). The task involves the sequential presentation of images (black and white mag-shots of single individuals) depicting specific emotional facial expressions. The task requires participants to examine each picture and indicate how they feel towards it on a *valence scale* [1 (more negative) – 9 (more positive)]. Our image-set comprised neutral, happy, sad, angry, and fearful faces – 10 images/emotions, equally balanced across gender and race (Beaupré, Cheung, & Hess, 2000). Valence scores for each emotion were obtained by averaging responses across its 10 images.

Finally, in order to receive a non-psychometric assessment of cognitive empathy, a *facial identification task* was devised; participants were asked to select which emotion they believed each of the

Table 1
Descriptives, Cronbach's alphas, and Pearson's correlation coefficients between dark triad, empathy, and gender.

	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	8
1. Gender					-.18*						
2. EQ global empathy	26.40	6.54	.82			-.08	-.21*	.13	.16	.03	.15
3. EQ cognitive empathy	13.94	3.81	.83			.82**	.84**	-.03	-.42**	-.26**	-.30**
4. EQ affective empathy	12.46	4.06	.73				.38**	.18*	-.16	-.10	-.08
5. Narcissism	14.07	6.41	.82					-.21*	-.52**	-.33**	-.40**
6. Primary psychopathy	31.06	6.57	.85						.32**	.24**	.28**
7. Secondary psychopathy	22.23	3.76	.61							.37**	.63**
8. Machiavellianism	54.35	8.42	.75								.35**

Females = 0; Males = 1.

* $p < .05$; two-tailed.

** $p < .01$; two-tailed.

above images expressed from five options (neutral, happy, sad, angry, and fearful). For each image, correct answers received a score of one, incorrect answers were scored zero. Identification scores for each emotion were obtained by averaging responses across its 10 images.

2.2. Participants and procedure

A total of 139 university students (106 females) participated in the study for course credit (age $M = 19.9$ years, $SD = 4.3$ years). The experiment took approximately 30 min per participant to complete and it was conducted on computers in a quiet room. First, participants completed the two facial emotion expression tasks (SAM and the facial identification). Subsequently, participants completed the questionnaire battery, which was presented in a pseudo-random order. Finally, demographic information was collected. The study was approved by the University of Sydney Human Research Ethics Committee, and data were treated in accordance with the university's data protection guidelines.

3. Results

3.1. Bivariate relations

3.1.1. Empathy (Table 1)

All personalities were positively correlated with each other, with psychopathy and Machiavellianism showing the strongest relationship. Higher primary psychopathy, secondary psychopathy, and Machiavellianism had lower global empathy. Individuals higher on any personality had lower affective empathy, but did not possess a reduced cognitive empathy, with narcissists even showing an increase in that empathy type.

3.1.2. Facial tasks (Table 2)

Narcissism correlated positively with valence towards sad images and anger identification, (i.e. individuals higher on narcissism tended to get a positive feeling when looking at sad faces and were rather accurate at recognising anger). Individuals higher on primary psychopathy felt more positively when looking at sad, angry, and fearful images and more negatively with happy images, but they were rather inaccurate at identifying all emotions. Machiavellians felt negatively with happy images and positively with sad images, while they tended to inaccurately identify happy or sad emotions.

3.2. Multivariate relations

A number of multiple linear regressions were conducted with each EQ variable, valence to facial emotions, and identification of facial emotions as DVs and all the dark triad personalities as IVs.

3.2.1. Empathy (Table 3)

The dark triad collectively predicted one fifth of the variability in global empathy, while it was a stronger negative predictor of affective than of cognitive empathy, after gender adjustment. Primary psychopathy was the only significant negative predictor of global and affective empathy, while narcissism was a significantly positive predictor of cognitive empathy.

3.2.2. Facial tasks (Tables 4 and 5)

Regarding facial emotion valence, the dark triad had incremental predictive power above and beyond gender for the variance in valence of only happy and sad expressions. Primary psychopathy was the main positive predictor of valence towards fearful expressions. Collectively the dark triad showed incremental validity in the prediction of variance in the identification of happy, sad, and angry expressions, with primary psychopathy being the main predictor of inaccuracy in identifying happy, angry, and fearful expressions. Finally, narcissism only predicted inaccuracy in the identification of angry faces.

4. Discussion

4.1. Empathy

Consistent with the literature and our predictions, all the dark triad personalities demonstrated negative relationships with global empathy. Specifically, they exhibited significant deficits in affective empathy, but showed weak relationships with cognitive empathy. This is the first study to explicitly identify this differential effect. Importantly, our results both challenge and clarify past research that has consistently suggested the existence of a negative relationship between the dark triad and general empathy. We question the utility of global empathy assessments that are arguably inefficient in discriminating between one's ability to read others' emotions and one's tendency to appropriately react to those emotions. Our results indicate that the consistently identified empathic deficits of the dark triad are probably affective in nature, possessing neither superior (except for narcissism) nor diminished cognitive empathy. In other words, individuals high on the dark triad traits appear to exhibit an empathic profile that allows them to retain their ability to read and assess others' emotions, and subsequently utilise this sensitive information to formulate strategies with which they can acquire what they want, while their lack of affective empathy may lead them to overlook or ignore potential harm inflicted to others in the process.

Unexpectedly, narcissism was positively related to cognitive empathy. Since narcissism is associated with overestimation of self-abilities (e.g. Ames & Kammrath, 2004), one possible explanation for this result is that the narcissists' sense of grandiosity leads to overrating their ability to read and understand the emotions of

Table 2
Descriptives and Pearson's correlation coefficients between dark triad and facial recognition tasks.

	M	SD	Gender	Narcissism	Primary psychopathy	Secondary psychopathy	Machiavellianism
<i>Valence</i>							
Neutral	4.83	0.42	-.18*	.07	.02	-.07	.07
Happy	8.03	0.88	-.02	-.15	-.23**	-.12	-.20*
Sad	3.06	0.91	-.04	.20*	.25**	.09	.25**
Angry	3.08	0.83	-.16	.06	.19*	.01	.14
Fear	3.71	0.98	.07	.15	.20*	.13	.07
<i>Identification</i>							
Neutral	8.09	1.76	.08	-.02	-.14	-.16	-.12
Happy	9.76	0.92	.11	-.08	-.23**	-.07	-.17*
Sad	8.88	1.36	.09	-.01	-.21*	.03	-.21*
Angry	8.91	1.50	.08	.23**	-.23**	-.08	-.10
Fear	9.19	1.52	.13	-.04	-.20*	-.06	-.12
Overall	44.83	4.60	.15	.04	-.30**	-.11	-.21*

* $p < .05$; two-tailed.

** $p < .01$; two-tailed.

Table 3
Hierarchical multiple linear regressions on empathy quotient (EQ).

Predictors	EQ global		EQ cognitive		EQ affective	
	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1		.03*		.01		.05*
Gender	-.18*		-.08		-.21*	
Step 2		.19**		.09*		.27**
Gender	-.13		-.08		-.13	
Narcissism	.15		.27**		-.01	
Primary psychopathy	-.37**		-.22		-.40**	
Secondary psychopathy	-.14		-.09		-.14	
Machiavellianism	-.02		.02		-.08	

Females = 0; Males = 1.

* $p < .05$; two-tailed.

** $p < .01$; two-tailed.

others. Thus, this finding may be a consequence of self-report bias. Conversely, narcissists may indeed possess a slightly superior cognitive empathy; their need for admiration and reinforcement of self-views would require a better understanding of how others view them.

4.2. Valence to facial emotions

We hypothesised that those higher in the dark triad would demonstrate inappropriate responding to facial expressions. Our results were of similar magnitude and direction to the findings of Ali et al. (2009), indicating that individuals high on narcissism, primary psychopathy, and Machiavellianism experienced positive affect towards sad emotions, thus showing affective desensitisation and discordance to such stimuli. Additionally, primary psychopaths experienced positive affect towards angry and fearful expressions, the latter of which had also been found in other studies (Blair et al., 2004; Montagne et al., 2005).

Finally, primary psychopathy and Machiavellianism were associated with experiencing negative affect towards happy expressions. This finding diverges from studies that indicate no facial processing deficits towards happy expressions associated with these personalities (Blair, Colledge, Murray, & Mitchell, 2001; Kosson, Suchy, Mayer, & Libby, 2002). However, it appears to be consistent with neuroimaging studies that tend to show highly psychopathic individuals demonstrating dysregulation in the amygdala (e.g. Kiehl et al., 2001; cf. Yang, Raine, Colletti, Toga, & Narr, 2010), which is known to play a role in coordinating emotional responses.

4.3. Identification of facial emotions

We predicted that the dark triad would not be associated with deficits in emotion identification. Results partly supported this hypothesis, by showing no emotion identification deficits associated with narcissism or secondary psychopathy. However, primary psychopathy demonstrated significant deficits in the accurate identification of all expressions except neutral, while Machiavellianism was associated with poorer ability to accurately identify happy and sad emotions. These deficits in emotional recognition are surprising since our results indicate that the dark triad is not associated with deficits in cognitive empathy, suggesting no impairments in emotional identification. One possible explanation for this discrepancy is that the accurate identification of emotions in facial expressions requires a degree of assessment in micro-expression changes, which is not possible when looking at static images. Another possibility is that the ability to identify emotions in facial expressions is related to affective empathy, not cognitive empathy. A recent study (Besel & Yuille, 2010), investigating how individual differences in empathy – as measured by the EQ – relate to facial expression recognition found that only affective empathy was a significant predictor of overall expression accuracy. We performed a *post hoc* replication of the Besel and Yuille analysis and the same result was produced demonstrating that affective empathy was a significant predictor of overall identification score ($\beta = .25$, $t(137) = 2.76$, $p < .01$), while cognitive empathy was not ($\beta = -.02$, $t(137) = -0.183$, $p = .86$). If the ability to recognise facial expressions is exclusively an affective empathy task, it indeed accounts for the facial recognition deficits found in primary psychopathy and Machiavellianism.

4.4. Importance of primary psychopathy

Since our study is the first to examine the relationship between multiple facets of empathy and the complete dark triad it permits examination of multivariate relationships. Our multivariate results highlight the major importance of primary psychopathy to empathy. Specifically, when individuals are matched on primary psychopathy, the other dark triad personalities are no longer significant predictors of affective empathy. Similarly, after accounting for primary psychopathy, Machiavellianism no longer predicts facial identification. Furthermore, these analyses show that primary psychopathy accounts for most of the variance in affective empathy, over and above what the other dark personalities already account for.

These results are important for two more reasons. First, the recovered patterns of psychopathic personality expression within

Table 4
Hierarchical multiple linear regressions on valence towards facial emotions.

Predictors	Neutral		Happy		Sad		Angry		Fearful	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1										
Gender	.18*	.03*	.02	.01	.04	.01	.16	.02	-.07	.01
Step 2		.01		.07*		.09*		.04		.06
Gender	-.17		-.07		.02		-.12		.10	
Narcissism	.06		-.08		.13		.01		.11	
Primary psychopathy	-.05		-.16		.13		-.01		.23*	
Secondary psychopathy	-.10		-.02		-.04		-.08		.06	
Machiavellianism	.09		-.09		.14		.03		-.11	

* $p < .05$; two-tailed.

Table 5
Hierarchical multiple linear regressions on facial emotion expression identification.

Predictors	Neutral		Happy		Sad		Angry		Fearful		Total	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1												
Gender	.08	.01	.11	.01	.09	.01	.08	.01	.13	.02	.15	.02
Step 2		.04		.07*		.08*		.16**		.05		.13**
Gender	.10		.16		.13		.09		.17		.19*	
Narcissism	.04		-.01		.05		.33**		.01		.14	
Primary psychopathy	-.10		-.23*		-.18		-.35**		-.24*		-.33**	
Secondary psychopathy	-.12		.04		.14		-.04		.02		-.01	
Machiavellianism	-.04		-.06		-.18		.03		.01		-.07	

* $p < .05$; two-tailed.

** $p < .01$; two-tailed.

a normal population are similar to those identified in incarcerated or clinical cohorts, further supporting the notion that psychopathy falls on a continuum of personality. Second, they provide one of the first documented empirical supports to the proposed structure of the upcoming 5th edition of the *Diagnostic & Statistical Manual of Mental Disorders* (DSM-V; American Psychiatric Association, 2011), in which psychopathy receives a focal attention and becomes a personality disorder class; concurrently they also cast doubt on the latest draft of the manual (21 June 2011) in which narcissism is, unjustifiably in our view, reinstated as a categorical class of disorder.

4.5. Limitations and future directions

Although, interesting gender effects appeared in our results, the study's large gender imbalance did not allow for their reliable inferential assessment. Differential gender associations among all the study variables have been identified in the literature and thus they should be accounted for to allow for a finer interpretation of the recovered relations.

The results relating to secondary psychopathy should be interpreted with caution given its reduced reliability ($\alpha = .61$), which could indicate certain sample peculiarities, since no scale items were found responsible for this reduction.

The results of the facial expression task were comparatively weak, possibly suggesting that the medium used was not strong enough to elicit a sufficient emotional response. By employing colour video footage and systematically varying that intensity of emotional expressions to reflect real-world interactions could result in strong and accurate empathic stimulations and allow for micro-expression change assessments.

Recent evidence suggests that the perception of facial expressions induces mimicry in the form of spontaneous, minute, synchronisation reactions of facial muscles (e.g. Rymarczyk, Biele,

Grabowska, & Majczynski, 2011), also known as *motor empathy* (Blair, 2005). Sonnyby-Borgstrom, Jonsson, and Svensson (2003) found significant differences in mimicry reactions between individuals with high and low affective empathy, with the latter exhibiting little or no mimicry. Research could implement the use of *electromyography* to assess facial mimicry during facial expression tasks. It would be expected that individuals higher on the dark triad would display minimal or even inappropriate mimicry. Furthermore, the spontaneous nature of this mimicry makes it robust against faking and deception.

5. Conclusion

By acknowledging cross-sectional, student-based, or otherwise stated limitations, the current study is still the first to (a) expand upon research on the dark triad of socially aversive personalities, and (b) attempt to clarify the specific nature of the empathic deficits associated with these personalities. Our findings suggest that high dark triad individuals exhibit substantial desensitisation towards the negative emotions of others, which, augmented by an intact cognitive empathy, likely aids their callous and manipulative nature.

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