

## DARK LADIES: MALADAPTIVE PERSONALITY DOMAINS, ALEXITHYmia, AND THE DARK TRIAD IN WOMEN

Carlo Garofalo, Cristina Virgilio, Stefan Bogaerts, & Adriano Schimmenti

### Abstract

**Objective:** The Dark Triad (DT) traits (Machiavellianism, narcissism, and psychopathy) have been linked with both alexithymia and maladaptive personality domains (negative affectivity, detachment, disinhibition, antagonism, psychoticism) comprised in the alternative model of personality disorder (AMPD) of the DSM 5. However, the differential associations of DT with the AMPD personality domains need to be further examined in research with homogeneous samples, in order to improve our understanding of malevolent personality traits.

**Method:** We examined the associations between maladaptive personality domains, DT traits and alexithymia factors in 420 women aged between 18 and 66 years old.

**Results:** Despite uniform bivariate associations, distinct profiles emerged from multiple regression analyses, in line with conceptual expectations. Antagonism was the only common positive predictor of all DT traits. Negative affectivity was positively associated with narcissism, but negatively with psychopathy and Machiavellianism. Psychopathy was related to high detachment and disinhibition. Alexithymia exerted a mediating effect in the association between AMPD domains and both psychopathy (positively) and Machiavellianism (negatively).

**Conclusions:** Findings showed differential personality profiles associated with the DT traits in women based on maladaptive traits that characterize personality pathology, with specific emotional mechanisms that may link maladaptive personality domains and the three DT components among women.

**Key words:** psychopathy, narcissism, Machiavellianism, emotion regulation, DSM-5, dark triad, women

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The Dark Triad (DT) of personality is a constellation of three personality traits, namely psychopathy, narcissism, and Machiavellianism (Paulhus & Williams, 2002). Although it was originally contended that the three traits share an antagonistic core, and thus they constitute an overarching personality factor (i.e., the DT; Paulhus & Williams, 2002), substantial evidence indicates that they represent three distinct, albeit related, constructs (Furnham, Richards, & Paulhus, 2013; Glenn & Sellbom, 2015). In defining the DT, Paulhus and Williams (2002) operationalized Machiavellianism as a manipulative personality style, characterized by cynical beliefs and a pragmatic morale. The construct of narcissism was described as a sub-clinical declension of the DSM-based diagnostic criteria for narcissistic personality disorder, including grandiosity and need for admiration, entitlement, and superiority. Psychopathic traits were defined in terms of impulsivity, thrill-seeking, lack of empathy, and low anxiety (Paulhus & Williams, 2002). As such,

measures of the DT traits clearly focus on a narrow operationalization of broader constructs, as it is well-established that especially narcissism and psychopathy are multidimensional constructs that entails various sub-dimensions (Glenn & Sellbom, 2015; Hare & Neumann, 2008). Nevertheless, DT measures may provide adequate indices to examine similarities and differences between the three constructs, especially in basic research and in conditions of time constraints or with special populations.

A substantial body of research has shown that the DT traits are associated with a wide array of negative consequences in different domains, such as workplace behavior, educational attainment, interpersonal relationships, mating behavior, and antisocial tendencies (Furnham et al., 2013; Klimstra, Sijtsema, Henrichs, & Cima, 2014; Muris, Merckelbach, Otgaar, & Meijer, 2017; Schimmenti et al., 2019). Therefore, researchers have tried to identify the building blocks of the DT traits to understand and ultimately limit their negative

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impact on society. Substantial research attention has been devoted to the examination of the DT in light of general models of personality, such as the five-factor model of personality (Costa & McCrae, 1990), which conceives personality in terms of five broad personality dimensions: agreeableness, conscientiousness, extraversion, neuroticism, and openness to experience. A recent meta-analysis (Muris et al., 2017) documented that the three DT traits shared a negative association with agreeableness. However, narcissism was also positively correlated with extraversion and openness, whereas both psychopathy and Machiavellianism had negative associations with conscientiousness. Based on this pattern of associations, some scholars have argued that Machiavellianism and psychopathy are indistinguishable in terms of basic personality traits, and that the link between Machiavellianism and low conscientiousness/disinhibition contrasts the original clinical description of Machiavellianism (Miller, Hyatt, Maples-Keller, Carter, & Lynam, 2016).

The DT has been described in terms of the basic personality domains included in the alternative model for personality disorder (AMPD) proposed in the DSM-5 Section III (American Psychiatric Association [APA], 2013). In this framework, personality disorders are defined by different constellations of maladaptive personality traits that are subsumed in five broad trait domains: negative affectivity, detachment, antagonism, disinhibition, and psychoticism. Although these domains present some continuity with the five-factor model of personality (Fossati, Somma, Borroni, Markon, & Krueger, 2017), the two models present a critical distinction, which may be important in relation to the DT. While the five-factor model can describe the DT traits in terms of extreme variations of normal personality traits, the AMPD approach focuses on pathological personality traits (Fossati et al., 2017; Grigoras & Wille, 2017). In the AMPD (APA, 2013), criteria for narcissistic personality disorder are exclusively in the antagonism domain (i.e., grandiosity, attention seeking). Conversely, psychopathy is defined by antisocial personality disorder criteria (i.e., antagonism and disinhibition domains), and three additional specifiers, namely low anxiety (negative affectivity domain), low withdrawal (detachment domain), and attention seeking (antagonism domain), though the rationale for the choice of these specifiers has been questioned (Crego & Widiger, 2014; Miller, Lamkin, Maples-Keller, Sleep, & Lynam, 2017).

Only few prior studies have linked the DT constructs with the AMPD trait domains. Across studies, narcissism was positively associated with antagonism and disinhibition, whereas psychopathy was positively related to detachment, antagonism, and disinhibition (Fossati, Krueger, Markon, Borroni, & Maffei, 2013; Miller, Gentile, Wilson, & Campbell, 2013; Somma et al., 2019; Strickland, Drislane, Lucy, Krueger, & Patrick, 2013). One study also reported positive associations between narcissism and negative affectivity, which were driven by the vulnerable (as opposed to grandiose) narcissism factor (Miller et al., 2013). Strickland et al. (2013) showed that negative affectivity was positively associated with the impulsive and callous traits of psychopathy, but negatively associated with psychopathic traits capturing social dominance and fearlessness (i.e., boldness). A study examined the relations between AMPD domains and the three DT constructs (Grigoras & Wille, 2017). This study reported some contradicting findings, which may be due to the nature of the sample (i.e., police officers, gendarmes, fire-fighters). Indeed, narcissism was associated with high antagonism and low detachment, but also with low

negative affectivity. Additionally, positive associations were found between psychopathy and both disinhibition (as expected) and psychoticism. The positive association between psychopathy and psychoticism, and the lack of association between psychopathy and antagonism appear at least counterintuitive and warrant future investigations.

While providing some knowledge base on the possibility to reproduce and distinguish the DT in terms of basic personality domains aligned with contemporary frameworks of personality disorders, most previous studies have been focused on male or mixed samples (Gray & Snowden, 2016; Muris et al., 2017), which limited the possibility to provide an in-depth examination of the associations between AMPD domains and DT traits among women. Translating research conducted in men to an understanding of DT traits in women may not be warranted, and simply controlling for gender in studies that included both male and female participants may help to understand the constructs under examination, but not their manifestation across gender. In line with these considerations, a recent study examining the relationship between AMPD domains and psychopathy in a sample of female Italian inmates (Somma et al., 2019) showed that disinhibition was linked to psychopathy scores as expected; however, an unexpected positive associations was observed between psychopathy scores and separation insecurity, thus suggesting the possibility that DT traits in women may emerge from peculiar and understudied personality features. Hence, the present study sought to provide an exclusive examination of the DT traits in a homogenous sample of community-dwelling women.

Furthermore, a potential advancement of prior studies may concern the exploration of possible mediating factors in the association between the AMPD domains and the DT. One such mechanism could lie in the domain of emotion regulation, defined as the ability to understand, describe, and modify one's emotional experience in the service of adaptive functioning (van der Linden et al., 2017). Emotion regulation has been shown to overlap substantially with the general factor of personality (van der Linden et al., 2017), and problems in emotion regulation are thought to characterize transdiagnostically most forms of psychopathology, including personality disorders and DT traits (Kealy, Ogrodniczuk, Rice, & Oliffe, 2017; Snowden & Gray, 2011). The ability to mentalize feelings (i.e., to identify and reflect about feelings) has been conceptualized at the basis of emotion regulation, and impairments in this ability have been related to personality pathology (Bateman & Fonagy, 2013). Among the different domains of maladaptive personality traits included in the AMPD, it stands to reason that higher levels of negative affectivity can result in overwhelming emotional experiences that are difficult to process and regulate (Schimmenti et al., 2019). Likewise, disinhibition is substantially related with limited emotional awareness (Snowden & Gray, 2011). Furthermore, psychoticism and antagonistic traits (e.g., hostility) have been linked with problems in emotion regulation (Garofalo, Holden, Zeigler-Hill, & Velotti, 2016; Velotti et al., 2016). Finally, a tendency to being detached from interpersonal experiences can limit one's ability to identify, label, and reflect upon feelings (Schimmenti et al., 2019).

In turn, impairments in the ability to identify, describe, and use feelings as a guide for adaptive behaviors (i.e., alexithymia) have been examined in relation to DT traits. Broadly defined, alexithymia entails a cognitive and affective style characterized by impairments in expressing affect and in differentiating mental states

from bodily sensations, along with an externally-focused thinking style (Vanheule, Desmet, Meganck, & Bogaerts, 2007). Alexithymia has been associated with psychopathic traits and – although less consistently – with Machiavellianism in various studies (Jonason & Krause, 2013; Malterer, Glass, & Newman, 2008; Schimmenti et al., 2017; Zeigler-Hill & Vonk, 2015). In contrast, although narcissism has been linked with emotional dysfunctions (Marissen, Deen, & Franken, 2012), the link between alexithymia and narcissism seems unclear, with different studies reporting positive (Jonason & Krause, 2013), negative (Zeigler-Hill & Vonk, 2015), or trivial and non-significant (Schimmenti et al., 2019) associations. Taken together, alexithymic features may function as a conceptual bridge that explains the connection between the different domains of maladaptive personality traits and the DT traits.

By looking at the different AMPD domain profiles that define the three DT constructs in a sample of women, as well as at the mediating role of alexithymia, it could be possible to untangle similarities and differences in the building blocks of psychopathy, narcissism, and Machiavellianism. Further, the combined role of maladaptive personality domains and alexithymia in explaining individual differences in DT traits may inform clinical studies, by integrating an investigation of antagonistic traits with a focus on maladaptive personality domains that characterize full-blown externalizing psychopathology in women, which is understudied. Therefore, we examined associations between the AMPD domains and the DT in a relatively large sample of community-dwelling women. Also, we examined the mediating effect of alexithymia in the associations between AMPD domains and DT traits.

In keeping with previous findings, we hypothesized that all the three DT constructs would be related to high antagonism, and that especially higher psychopathy would be related to higher disinhibition. Because of contrasting findings in prior studies, we remained agnostic regarding other associations. However, based on theoretical grounds, we expected Machiavellianism to be unrelated or negatively related to disinhibition (Miller et al., 2016). Finally, we expected that alexithymia would mediate associations between AMPD domains and psychopathy, but not narcissism, in light of inconsistent findings from prior research and based on the clinical consideration that narcissists highly value their own feelings and that they often behave in social relationships in response to negative or positive feelings evoked by others' behaviors (Seidman, 2016). This would particularly apply to our women sample, as they usually are less alexithymic than males and tend to value emotions and feelings more than men (Levant, Hall, Williams, & Hasan, 2009). Analyses concerning alexithymia and Machiavellianism were largely exploratory, due to the paucity of prior research. Taken together, the present study sought to advance current knowledge in two main ways: first, by providing a specific examination of the DT traits in women through the lens of the DSM-5 personality trait domains; second, by investigating whether any such association between personality trait domains and DT traits may be partly explained by a common emotional dysfunction, namely alexithymia.

## Method

### Participants

The study involved 420 community-dwelling Italian

women ranging in age from 18 to 66 years ( $M=26.56$ ,  $SD=7.27$ ). The educational level of participants was distributed as follows: 3.8% ( $N=16$ ) followed low education (primary or middle school); 40.7% ( $N=171$ ) high-school education; 42.2% ( $N=177$ ) university-level education; and 13.3% ( $N=56$ ) post-graduate education. The majority of participants were not married (81.2%,  $N=341$ ); 7.4% ( $N=31$ ) were in co-habiting relationships; 10% ( $N=42$ ) were married, and 1.4% ( $N=6$ ) were divorced.

### Procedures

Convenience sampling was used to recruit participants. An electronic module consisting of three tests was built and subsequently spread on the web through social networks (mainly through Facebook pages) and e-mails, asking each individual who accepted to participate in the study to share the module with their friends and acquaintances. Hence, participants completed the survey in a location of preference using electronic devices. Before completing the survey, participants had to provide informed consent through the electronic module. From the final electronic module, it was not possible to trace the identity of the subject. Participants did not take any compensation for their involvement in the study. The study was approved by the local Institutional Review Board.

### Measures

**Dark Triad Dirty Dozen (DTDD;** Jonason & Webster, 2010). The DTDD is a concise measure of the DT that measures psychopathy, narcissism and Machiavellianism, through 4 items for each construct. Each item is rated on a 5-point Likert scale ranging from 0 (*never*) to 4 (*always*). Scale scores are calculated by averaging the items that comprise each scale. Higher scores on DTDD scales indicate higher DT traits. Although criticisms have been raised about the content coverage of the DTDD (Miller et al., 2012), the DTDD has showed adequate psychometric properties (Webster & Jonason, 2013). The Italian version of the DTDD has recently been validated, replicating the reliability and validity of the original version (Schimmenti et al., 2019), as well as evidence of measurement invariance across gender (Chiorri, Garofalo, & Velotti, 2017).

**Personality Inventory for DSM-5-Brief Form (PID-5-BF;** APA, 2013). The PID-5-BF is the 25-item short-version of the PID-5, the official APA (2013) self-report questionnaire to assess DSM-5 Section III AMPD traits. Designed as a screener for personality pathology, the PID-5-BF yields scores on the five higher-order domains of the AMPD: negative affectivity, detachment, antagonism, disinhibition, and psychoticism. Each domain is measured through 5 items rated on a 4-point Likert scale (from 0=*very false or often false*, to 3=*very true or often true*). Each domain score ranges from 0 to 15, with higher scores indicating greater dysfunction in the specific personality domain. The Italian version of the PID-5-BF has shown adequate psychometric properties and construct validity (Fossati et al., 2017).

**Toronto Alexithymia Scale-20 (TAS-20;** Bagby, Parker, & Taylor, 1994). The TAS-20 is a 20-item self-report questionnaire that measures alexithymia across three dimensions: difficulty identifying feelings (DIF), difficulty describing feelings (DDF), and externally oriented thinking (EOT). Each item is rated on a 5-point Likert scale (from 1=*Don't agree at all*, to 5=*Completely agree*). Higher scores on TAS-20 factors

indicate higher alexithymic traits. Although clinical cut-offs have been proposed for the TAS-20, there is evidence that alexithymia represents a trait that is normally distributed in the general population (Parker, Keefer, Taylor, & Bagby, 2008), hence alexithymia scores were used as continuous variables. The TAS-20 has shown adequate reliability and construct validity, though the EOT scale tends to perform relatively worse than and correlate weakly with the DIF and DDF scales, both in the original version and in the Italian translation (Bressi et al., 1996).

### Data Analysis

Descriptive statistics, internal consistency estimates, and zero-order correlations among for all study variables were calculated in SPSS version 24 (IBM Corp., 2016). According to standard guidelines, internal consistency coefficients  $\alpha$  were considered acceptable for values  $> .70$  (e.g., Tavakol & Dennick, 2011). Effect sizes for correlation coefficients were considered small, moderate, and large for values of  $r = .10, .30, .50$ , respectively (Cohen, 1988). The same software was used to compute multiple regression analyses, regressing each of the DTDD scales on the PID-5-BF subscales entered simultaneously as predictors. Indirect effect analyses were conducted to test the mediation of TAS-20 scales (entered simultaneously in multiple mediation models) in the relations emerged from multiple regression analyses. The predictors and the mediators were mean-centered, heteroskedasticity consistent standard errors were calculated, and 5,000 bootstrap resampling with replacement were used to reduce the risk of biased results, by using the PROCESS Macro for SPSS (Hayes, 2013).

### Results

Descriptive statistics, internal consistency estimates,

and zero-order correlations among study variables are displayed in **Table 1**. Internal consistency  $\alpha$  coefficients were acceptable for some but not all variables, although values never fell below  $.66$  and should be considered in light of the limited scale length as well as in light of the moderately strong levels of average inter-item correlations. All study variables were reasonably normally distributed, based on levels of skewness and kurtosis that never exceeded  $|1.156|$ . Participants with missing data on more than 20% of the items on a given scale ( $n = 6$ ) were removed from the analyses involving those scales. Participants' age had small, negative correlations with the PID-5-BF negative affectivity and psychoticism scales, the TAS-20 DIF and DDF scales, and the DTDD psychopathy scale ( $r_{\text{range}} = -.159 - -.233$ ). The three DTDD scales were uniformly and positively related with the five PID-5-BF domains. Psychopathy was significantly and positively related to the three scales of the TAS-20, narcissism was uniquely related to greater levels of the TAS-20 DIF, and Machiavellianism was unrelated to the TAS-20. All PID-5-BF scales had significant positive associations with the DIF and DDF scales of the TAS-20, but only detachment and disinhibition were positively associated with the EOT scale. Effect sizes were all in the small-to-moderate range with few exceptions.

Controlling for shared variance among PID-5-BF scales in multiple regression analyses, antagonism emerged as an independent positive predictor of all DTDD scales. Detachment and disinhibition significantly and positively predicted psychopathy, whereas negative affectivity was significantly and positively related to narcissism. Psychoticism was negatively related to narcissism, and negative affectivity was negatively related to both psychopathy and Machiavellianism. **Table 2** summarizes the results of the regression analyses.

The TAS-20 DDF scale significantly explained the relation between the detachment, antagonism, and disinhibition scales of the PID-5-BF, and psychopathy.

**Table 1.** Mean, standard deviation (SD), internal consistency coefficients ( $\alpha$  and AIC), and bivariate correlations for all study variables ( $N=420$ )

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Machiavellianism	–	.27**	.50**	.12*	.14**	.58**	.14**	.18**	.07	.05	.02
2. Psychopathy		–	.21**	.10*	.39**	.30**	.34**	.29**	.25**	.33**	.18**
3. Narcissism			–	.31**	.18**	.60**	.15**	.16**	.13**	.03	.05
4. Negative affectivity				–	.42**	.34**	.26**	.51**	.52**	.34**	.08
5. Detachment					–	.30**	.23**	.46**	.49**	.52**	.25**
6. Antagonism						–	.29**	.35**	.30**	.14**	.07
7. Disinhibition							–	.42**	.36**	.19**	.15**
8. Psychoticism								–	.62**	.43**	.07
9. DIF									–	.63**	.14**
10. DDF										–	.23**
11. EOT											–
<i>M(SD)</i>	.64 (.69)	.85 (.75)	1.45 (1.00)	7.64 (3.26)	4.22 (3.02)	3.05 (2.96)	4.19 (2.98)	4.48 (3.68)	16.13 (6.65)	13.72 (5.13)	16.01 (4.68)
<i>AIC</i>	.58	.35	.59	.29	.29	.38	.30	.43	.47	.44	.18
$\alpha$	.85	.68	.86	.67	.66	.69	.67	.79	.86	.79	.63

Note. DIF=Difficulty Identifying Feelings of the Toronto Alexithymia Scale-20 (TAS-20). DDF=Difficulty Describing Feelings of the TAS-20. EOT=External Oriented Thinking of the TAS-20. AIC=Average Inter-item Correlation.

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

**Table 2.** Multiple regression analysis examining the independent associations between PID-5-BF scales and the Dark Triad (N=420)

	Machiavellianism		Psychopathy		Narcissism	
	<i>β</i> ( <i>sr</i> )	<i>t</i>	<i>β</i> ( <i>sr</i> )	<i>t</i>	<i>β</i> ( <i>sr</i> )	<i>t</i>
Negative affectivity	-.10 (.01)	-1.99*	-.20 (.03)	-3.88**	.18 (.02)	3.93**
Detachment	-.01 (.00)	-.24	.33 (.08)	6.72**	-.02 (.00)	-.39
Antagonism	.61 (.30)	13.83**	.18 (.03)	3.78**	.59 (.28)	13.85**
Disinhibition	-.02 (.00)	-.52	.23 (.04)	4.87**	-.02 (.00)	-.44
Psychoticism	.03 (.00)	.51	.07 (.00)	1.35	-.12 (.01)	-2.41*
	<b>R<sup>2</sup></b>	.34		.25		.38
	<b>F</b>	43.36**		29.53**		52.66**

Note. *sr*<sup>2</sup> = squared semi-partial correlation coefficients, representing the portion of total variance explained (R<sup>2</sup>) by each predictor.

\* *p* < .05. \*\* *p* < .01.

**Table 3.** Indirect effect analysis examining the indirect effect of PID-5-BF scales on the Dark Triad through alexithymia (N=420; 5,000 bootstraps)

Independent variable (IV)	Dependent variable (DV)	Mediating variables (M)	Effect of IV on M (95%CI)	Effect of M on DV (95%CI)	Total effect (95%CI)	Direct effect (95%CI)	Indirect effect (95%CI)
PID-5-BF	DTDD	TAS-20					
Antagonism	Machiavellianism	DIF	.47 (.33, .62)	-.11 (-.18, -.03)			<b>-.05 (-.10, -.01)</b>
		DDF	.24 (.08, .41)	.04 (-.03, .11)	.68 (.59, .77)	.72 (.62, .81)	.01 (-.00, .03)
		EOT	.07 (-.03, .17)	-.02 (-.11, .07)			-.00 (-.02, .00)
Detachment	Psychopathy	DIF	.77 (.64, .90)	-.01 (-.10, .08)			-.01 (-.09, .07)
		DDF	.88 (.74, 1.01)	.13 (.04, .22)	.48 (.37, .59)	.36 (.23, .49)	<b>.11 (.03, .20)</b>
		EOT	.24 (.15, .34)	.08 (-.03, .20)			.02 (-.01, .05)
Antagonism	Psychopathy	DIF	.47 (.33, .62)	-.02 (-.11, .07)			-.01 (-.06, .04)
		DDF	.24 (.08, .41)	.21 (.13, .30)	.38 (.27, .50)	.33 (.22, .45)	<b>.05 (.02, .10)</b>
		EOT	.07 (-.03, .17)	.12 (.01, .23)			.01 (-.00, .03)
Disinhibition	Psychopathy	DIF	.58 (.44, .72)	-.04 (-.13, .05)			-.02 (-.09, .03)
		DDF	.32 (.16, .48)	.22 (.13, .30)	.43 (.31, .54)	.37 (.25, .49)	<b>.07 (.03, .12)</b>
		EOT	.15 (.05, .25)	.09 (-.02, .20)			.01 (-.00, .04)
Negative affectivity	Narcissism	DIF	.76 (.64, .88)	.02 (-.11, .16)			.02 (-.09, .13)
		DDF	.53 (.39, .68)	-.10 (-.22, .01)	.48 (.34, .62)	.52 (.35, .68)	-.06 (-.13, .00)
		EOT	.08 (-.01, .17)	.06 (-.09, .22)			.00 (-.00, .03)
Antagonism	Narcissism	DIF	.47 (.33, .62)	-.02 (-.13, .09)			-.01 (-.07, .05)
		DDF	.24 (.08, .41)	-.05 (-.15, .05)	1.02 (.89, 1.15)	1.04 (.90, 1.18)	-.01 (-.05, .01)
		EOT	.07 (-.03, .17)	.03 (-.10, .16)			.00 (-.01, .02)

Note. PID-5-BF=Personality Inventory for DSM-5–Brief Form. DTDD=Dark Triad Dirty Dozen. TAS-20=Toronto Alexithymia Scale-20 items. DIF=TAS-20 Difficulty Identifying Feelings. DDF=TAS-20 Difficulty Describing Feelings. EOT=TAS-20 External Oriented Thinking. CI=confidence interval. 95% CIs that do not include zero indicate significant effects (reported in bold typeface).

The TAS-20 DIF scale significantly – but negatively - mediated the relation between PID-5-BF antagonism and Machiavellianism. No significant indirect effects were found in the models predicting narcissism. Results of indirect effect analyses are reported in **Table 3**.

### Discussion

The present study investigated the DT in relation to AMPD domains and alexithymia in a community sample of women. In so doing, the present investigation extended existing knowledge by showing that conceptually-expected profiles of the DT constructs

based on the AMPD were corroborated in a woman sample. Our results supported the shared antagonistic core of the three DT constructs in women, while also elucidating meaningful differences among them in relation to maladaptive personality domains. Further, we provided evidence that emotion regulation problems – at least as indexed by individual differences in alexithymia – may be specifically related to psychopathy, and explain the link between maladaptive personality traits and psychopathic traits among women.

Correlation findings were largely consistent with the expectations. Both alexithymia and all DT constructs were associated with maladaptive personality domains. An interesting pattern of associations between alexithymic traits and the DT occurred, showing that only psychopathy was associated with alexithymia across domains. This result is in line with previous research on male samples and mixed samples (Malterer et al., 2008; Zeigler-Hill & Vonk, 2015), and consistent with the well-established links between psychopathy and emotional disturbances, including limited insight into emotional experience and poor emotional awareness (Hare & Neumann, 2008; Malterer et al., 2008). Narcissism was selectively and only modestly related to difficulties in identifying feelings, suggesting that women with high narcissism may manifest poor emotional clarity, but yet be able to focus on their internal emotional state and describe their feelings. In contrast to other studies (Jonason & Krause, 2013; Schimmenti et al., 2019), Machiavellianism was unrelated to alexithymia among women. This finding is in line with the original assumption that Machiavellianism is the least maladaptive of the DT constructs (Furnham et al., 2013; Paulhus & Williams, 2002).

Analyses of the independent associations between maladaptive personality domains and the DT replicated and extended prior findings. We corroborated previous evidence obtained in male samples (or controlling for gender), supporting the notion that antagonism lies at the core of the DT, being associated with psychopathy, narcissism, and Machiavellianism. Furthermore, we found evidence for a differential pattern of relations between the DT constructs and the other domains of the AMPD. Detachment and disinhibition appeared to uniquely characterize psychopathy. These findings are consistent with the callous and impulsive traits that are considered part and parcel of psychopathy (Hare & Neumann, 2008; Paulhus & Williams, 2002), as well as with the inability or unwillingness to form emotional bonds that is related to severe psychopathic traits in both men and women (Schimmenti et al., 2014). It should be noted that the positive association between psychopathy and detachment is in contrast with the DSM-5 specifier, which defines psychopathy as characterized by low levels of withdrawal (from the detachment domain; APA, 2013). This finding may pose further questions on the theoretical rationale for the psychopathic disorder specified in DSM-5 AMPD (Crego & Widiger, 2014; Miller et al., 2017), especially for what concerns its manifestations among women. In fact, other traits of the AMPD detachment domain are restricted affectivity and intimacy avoidance, which could explain the positive association between detachment and psychopathy in our sample.

A differential pattern of associations also emerged linking negative affectivity with the DT. We found evidence that negative affectivity may be prominent in women, and we observed that negative affectivity was negatively related to Machiavellianism and psychopathy, but positively related to narcissism. The negative relation between negative affectivity

and Machiavellianism is consistent with the lack of associations between Machiavellianism and alexithymia, and more generally with the possibility that Machiavellianism is related with subjective well-being and low internalizing symptoms (Furnham et al., 2013; Muris et al., 2017). Conversely, if the negative association between psychopathy and negative affectivity in our sample appears consistent with a view of psychopathy as characterized by fearlessness and emotional resilience (Patrick, Fowles, & Krueger, 2009), it seems at odds with the hostile and angry features of psychopathy (Hare & Neumann, 2008), and with recent meta-analytic evidence that psychopathy seems associated with increased levels of anger and lower levels of happiness (Hoppenbrouwers, Bulten, & Brazil, 2016). One possible explanation is that the DTDD operationalization of psychopathy is more aligned to a conceptualization of psychopathy as largely immune from negative emotional experiences. However, it may also be that these two perspectives are not mutually exclusive, and that among women with increased levels of DT traits the angry features linked to psychopathy are not part of broader negative affective experience, but rather represent a strategy to achieve their goals by preying on others or occur in response to specific contextual contingencies (e.g., frustrated reward pursuit). Finally, the positive association between narcissism and negative affectivity is consistent with prior findings on pathological grandiose narcissism (Miller et al., 2013). This finding may also suggest that narcissistic personality features in some women may emerge to counteract negative feelings, and ultimately to protect one's self-image (Granieri et al., 2017). These considerations appear to place narcissism on the more neurotic side of the DT constellation in women, while its association with psychoticism warrants further investigation.

In short, while antagonism was a common component of the DT in our woman sample, psychopathy was distinctively characterized by detachment and disinhibition, while narcissism by negative affectivity. In contrast, although Machiavellianism had a unique profile, it seemed to be subsumed in the characterization of psychopathy, which included all of the features defining Machiavellianism, and additional unique characteristic. These findings may be consistent with the argument that Machiavellianism should not be considered as a stand-alone construct separated by psychopathy, as it fails to produce incremental information above psychopathy (Glenn & Sellbom, 2015; Miller et al., 2016).

Yet, our mediation findings appeared to provide an alternative possibility, suggesting a potential difference between psychopathy and Machiavellianism in women. In fact, mediation results showed that alexithymic traits partly accounted for the indirect effect of maladaptive personality trait domains and both psychopathy and Machiavellianism, but with opposite sign. Based on theoretical grounds (e.g., Bateman & Fonagy, 2013), we speculated that maladaptive personality traits would hamper an individual ability to mentalize feelings, in turn contributing to increased levels of DT traits. Although alternative models could be equally viable, our findings supported the proposed mediating effect of alexithymia in predicting psychopathic and Machiavellian traits, but not narcissism.

In more detail, we found that the mediating effect of alexithymia in the relation between antagonism and Machiavellianism was negative. Actually, it appeared that antagonism could contribute to psychopathy through increased difficulty identifying feelings, whereas a

difficulty describing feelings might reduce the impact of antagonism on Machiavellianism among women, thus suggesting that women displaying higher levels of both psychopathy and Machiavellianism may display similar levels of antagonism but different alexithymic traits that are predominant in their personality.

The fact that alexithymia did not play a role in the link between maladaptive personality domains and narcissism may elucidate a potential difference in the emotional functioning associated with the DT in women. That is, while psychopathy seemed related to problems in mentalizing (and by extension emotion regulation; see Schimmenti, 2016) but not negative affectivity, and narcissism seemed related to negative affectivity but not problems in mentalizing, Machiavellianism was unrelated to either impairment in the emotional domain. These differences were able to explain the distinct associations that the DT traits – at least as assessed with the DTDD – had with the maladaptive domains of the AMPD in women.

A few limitations should be acknowledged. First, our reliance on self-report measures may have inflated correlations due to shared method variance. Second, the use of a concise measure of the DT did not allow for a comprehensive assessment of the multiple components that constitute the overarching psychopathy (Hare & Neumann, 2008), and narcissism constructs (Miller et al., 2013). Third, although the use of a woman sample was chosen to expand current knowledge, the relative homogeneity of the demographic characteristics and the absence of a male sample did not allow to examine the generalizability of findings. Fourth, it should be emphasized that mediation effects based on observational data should be interpreted with the clause that the assumed causal relations between variables is true (Hayes, 2013). In particular, the limitations in the use of cross-sectional data for mediation analysis are implied in the fact that the temporal ordering of the variables under investigation can only be inferred on conceptual ground but cannot be established empirically.

## Conclusions

Its limitations notwithstanding, the present study provides novel insights into the building blocks of the DT, corroborating the antagonistic core of the DT, along with some specificity in the characterization of Machiavellianism (low negative affectivity), psychopathy (low negative affectivity, high detachment, high disinhibition), and narcissism (high negative affectivity) among women. Our findings suggest that difficulties in mentalizing and emotion regulation may be uniquely related to psychopathy and serve as a mechanism linking the basic maladaptive traits of antagonism, detachment and disinhibition with psychopathic traits in women. Although our study was conducted in a community sample, potential clinical implications of our findings can be inferred based on the pattern of results emerged. In particular, it appears that psychotherapeutic intervention for women characterized by elevations on some, but not others, DT traits should be characterized by shared (e.g., focus on antagonism) but also important distinctive features, such as a focus on negative affectivity, detachment, disinhibition, depending on the specific profile. Moreover, the findings suggest that emotion regulation interventions might be quite effective for women who display increased scores on narcissism but not on psychopathy or Machiavellianism, due to their negative

affectivity, whereas mentalizing and/or behavior-based interventions should likely be preferred for those women who display high levels of psychopathy and Machiavellianism, due to their low levels of negative affectivity and high levels of detachment.

## Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional committee of UKE - Kore University of Enna, and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

## Informed consent

Informed consent was obtained from all individual participants included in the study.

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